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KING RANGE
NATIONAL CONSERVATION AREA
PROPOSED MANAGEMENT PROGRAM

Final Environmental Impact Statement

UNITED STATE DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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SUMMARY

Draft ( ) Final (x) Environmental Statement

Department of the Interior, Bureau of Land Management

1. Type of Action: Administrative (x) Legislative ( )

2. Brief Description of Action: Proposed establishment of the King Range National Conservation Area in Humboldt and Mendocino Counties, California. The proposal includes designation of the Area boundaries, a multiple use plan, a management program implementing the plan, and proposed regulations governing mining activities in the Area.

3. Summary of Environmental Impact and Adverse Environmental Impacts: The proposal will restrict mineral exploration, construction of 37 miles of new road and reconstruction of 30 miles of existing road will result in some increase in sedimentation, reseeding of 1200 acres of presently eroding soils, and reforestation of 2600 acres will reduce sediment yield and restore productive capacity of forest sites. Recreation use will increase by over 100 percent, leading to adverse impacts on wildlife and primitive recreation values.

4. Alternatives Considered:

    A. No action
    B. Alternative Management Philosophies
        1. Full Preservation of Environmental Quality
        2. Maximum Utilization of Resources
    C. Alternative Levels of Implementation
        1. Assuming a $1,000,000 Budget
        2. Assuming a $3,000,000 Budget

5. Date Statement Made Available to CEQ and the Public:

    Draft Statement: May 31, 1974

    Final Statement: AUG 13 1974

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6. Comments have been requested from the following. Comments were received from those agencies, organizations and individuals indicated by an asterisk.

Federal Agencies

Dept. of Agriculture
  Forest Service
  Soil Conserv. Service*

Dept. of the Army
  Corps of Engineers*

Dept. of Commerce
  National Oceanic and Atmospheric Admin.

Environmental Prot. Agency*

Dept. of the Interior
  Fish & Wildlife Service
  Bureau of Mines
  Bureau of Outdoor Recreation*
  Bureau of Reclamation
  Geological Survey
  National Park Service*

State Agencies

Office of Planning & Research*
Office of the Governor (State Clearinghouse) - covers all concerned state agencies
Coastal Zone Conserv. Comm.

Regional and Local

North Coast Region, Water Quality Control Board
Humboldt County Air Pollution* Control Board
Mendocino Co. Air Pollution Control Board
North Coast Regional Coastal Zone Conserv. Commission
Humboldt Bay Harbor, Recreation & Conservation Commission
Humboldt Resort District No. 1
Mendocino Co. Board of Supervisors
Humboldt Co. Board of Supervisors

Organizations and Individuals

Far West Motorcycle Club
Mendocino Co. 4-Wheel Drive Patrol
Western Rockhound Assn., Inc.
Calif. Assn. of 4-Wheel Drive Clubs, Inc.
Redwood Empire 4-Wheel Drive Club
Redwood Region Audubon Society
Humboldt Wildlife Conservation Club
Redwood Chapter, Sierra Club
Redwood Buggy Association
Boot & Blister Club
Dr. Ed Schwartzman
Mr. Steven P. Steinhour
Mr. Leonard Blomquist
Dr. David P. Stevenson
Mr. Kay Roscoe
Mr. Robert McKee
Dr. Donald W. Hedrick
Mr. William Brown
Mr. Mal Coombs
Dr. William Devall

DEPARTMENT OF THE INTERIOR

FINAL
ENVIRONMENTAL STATEMENT

INT FES 74-45

Proposed

MANAGEMENT PROGRAM
KING RANGE NATIONAL CONSERVATION AREA

Prepared by

CALIFORNIA STATE OFFICE, SACRAMENTO, CALIFORNIA
BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

Curt Berklund
Director, Bureau of Land Management

KING RANGE NATIONAL CONSERVATION AREA

PROPOSED MANAGEMENT PROGRAM

FINAL ENVIRONMENTAL IMPACT STATEMENT

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I. DESCRIPTION OF THE PROPOSAL

A. Purpose

The Bureau of Land Management, Department of the Interior, proposes to implement a management program for the King Range National Conservation Area (KRNCA). The program has been prepared in response to the mandate of the King Range Act, Public Law 91-476. The main features of this act are summarized below:

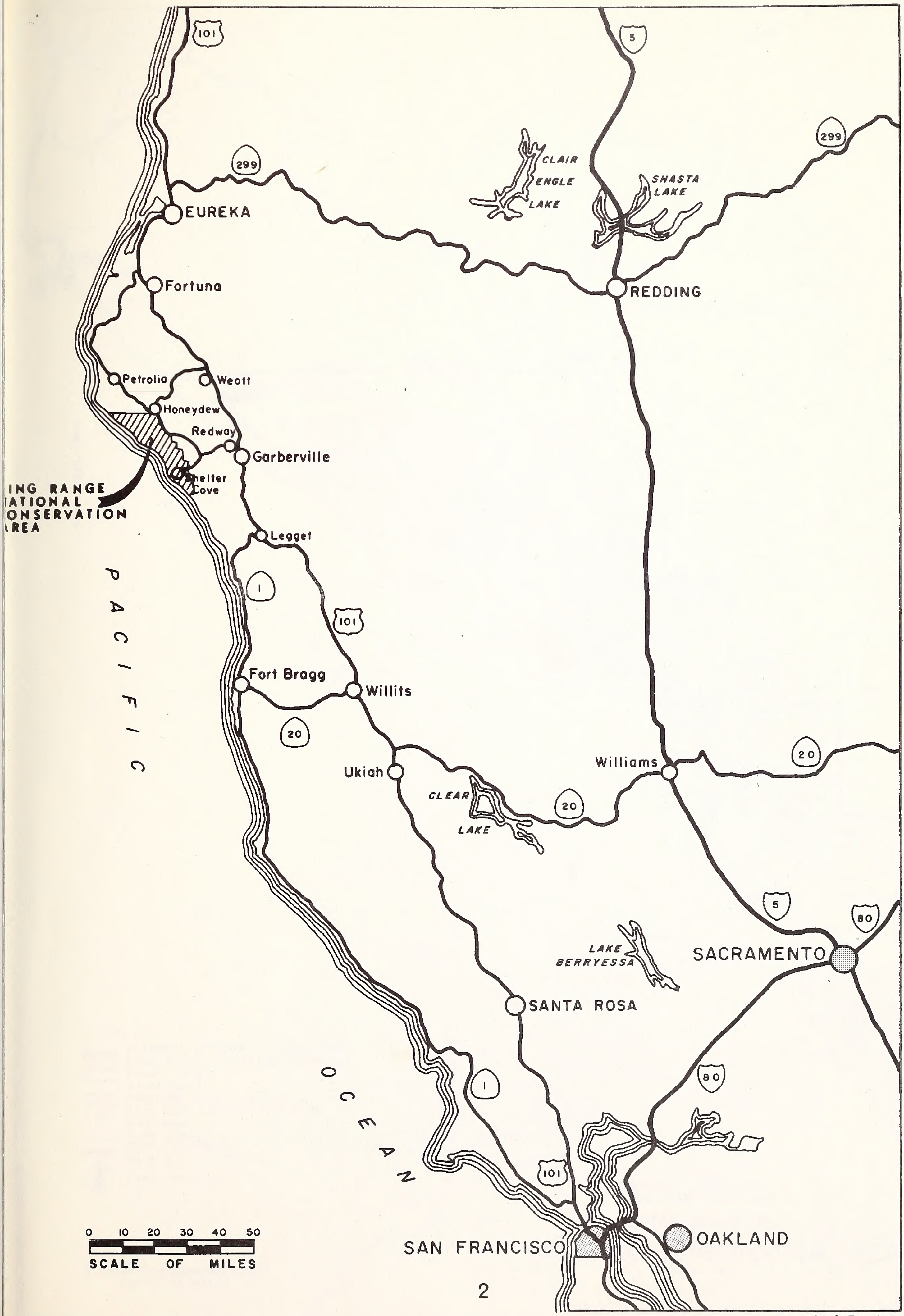
1. The Act authorizes and directs the Secretary of the Interior to establish within described boundaries, the King Range National Conservation Area, "and to consolidate and manage the public lands in the area with the purpose of developing for the use and benefit of the people of the United States the lands and other resources therein under a program of multiple usage and of sustained yield." Procedural requirements for accomplishment of this objective are set out in the Act.

2. It directs that "... there will be a comprehensive, balanced, and coordinated plan of land use, development, and management of the area, ... based on an inventory and evaluation of available resources... and other features of the Area." The plan is to cover all lands within the Area, regardless of ownership.

3. It requires that "the plan will indicate the primary or dominant uses which will be permitted on various portions of the Area" and that "secondary or collateral uses may be permitted to the extent that such uses are compatible with and do not unduly impair the primary or dominant uses, according to a seasonal schedule or otherwise."

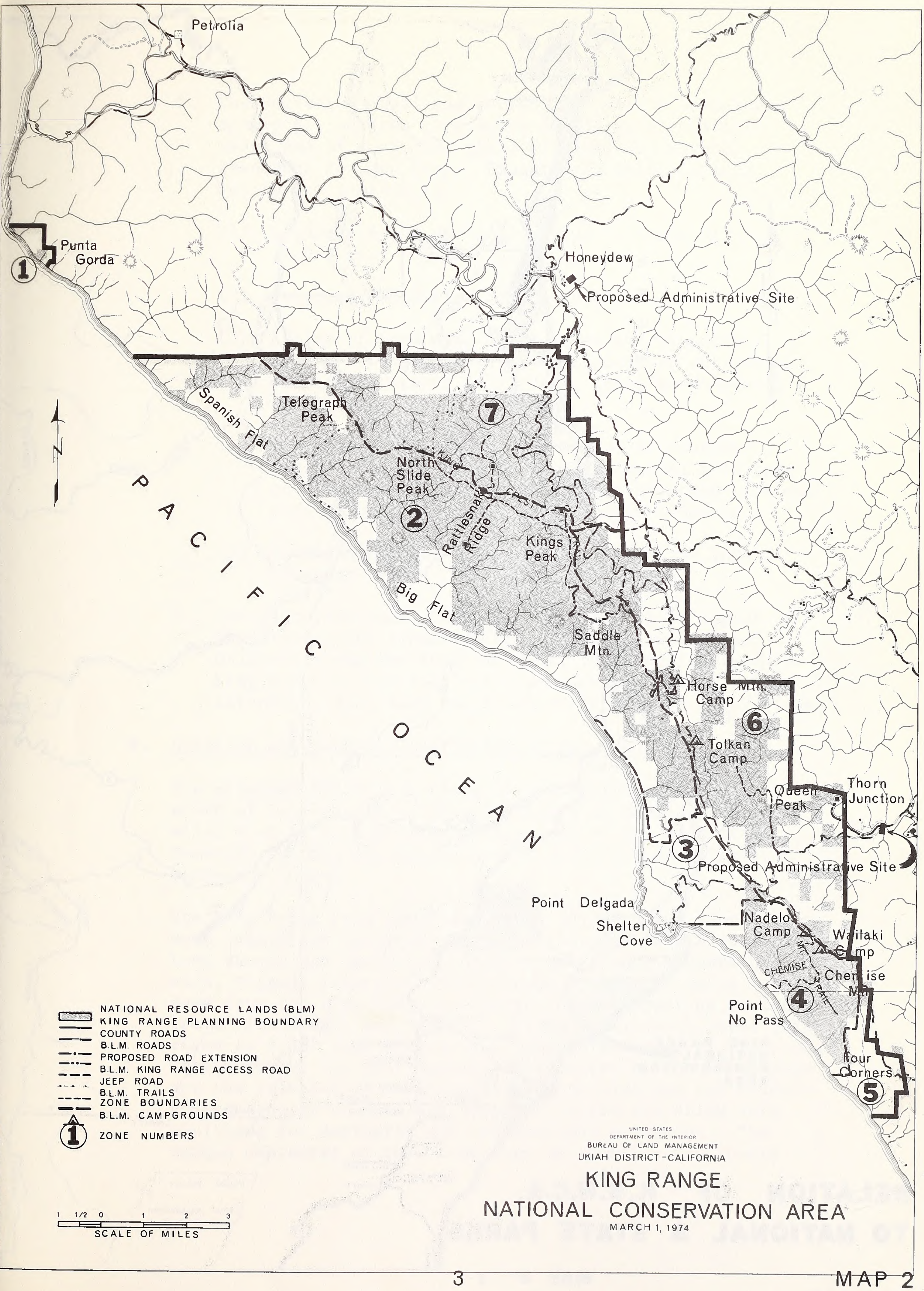
4. The Secretary may acquire lands or interest in lands within the Area through purchase or exchange. In an exchange of lands the Secretary can pay or accept up to one-third the value of the land in cash to equalize values. The Secretary may not acquire, without the consent of the owner, any private lands which, on the date of the Act, were utilized for residential, agricultural, or commercial purposes so long as such usage is compatible with the purposes of the Act.

5. The Secretary may establish reasonable mining regulations to protect the scenic and aesthetic values of the Area and to assure against pollution of the streams and waters.



MAP I

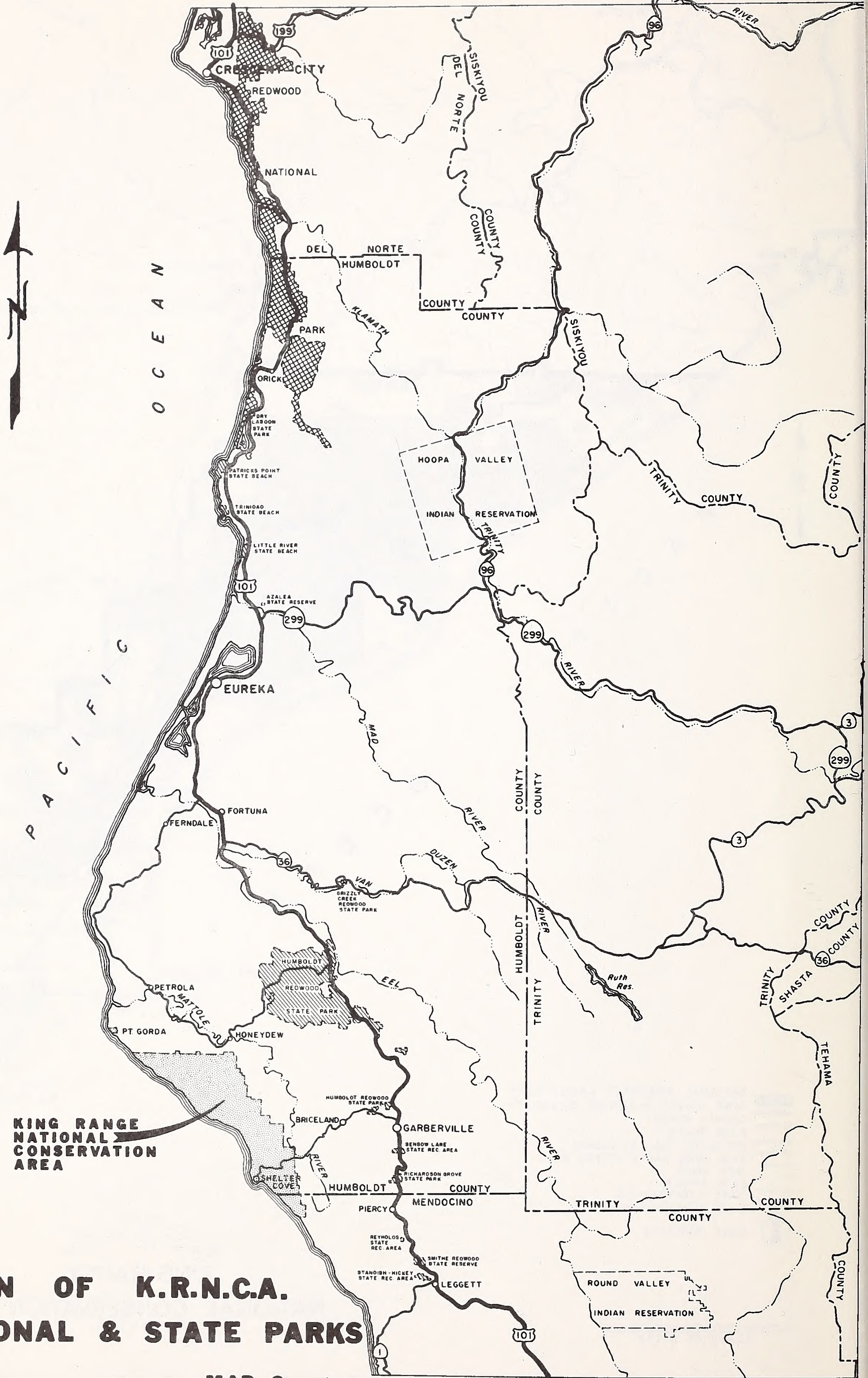
DRAWING NUMBER:04-050-01-36



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
UKIAH DISTRICT-CALIFORNIA

KING RANGE
NATIONAL CONSERVATION AREA
MARCH 1, 1974

MAP 2



RELATION OF K.R.N.C.A. TO NATIONAL & STATE PARKS

MAP 3

DRAWING NUMBER: 04-050-01-25

6. The Secretary shall use public and private assistance as may be required to prepare a program of multiple usage and of sustained yield of renewable natural resources for the Area. The program shall include, but is not limited to:

   (1) A quantitative and qualitative analysis of resources.

   (2) Proposed boundaries of the Area.

   (3) A plan of land use, development and management together with any proposed cooperative activities with the State of California, local governments, and others.

   (4) A statement of expected costs and an economic analysis of the program with particular reference to costs to the United States and expected economic effects on local communities and governments.

   (5) An evaluation of the program in terms of local interest.

7. The Secretary shall establish the Area after copies of the program are submitted to Congress, the Governor of California and the supervisors of the counties in which King Range is located, after publishing a notice of his intention, and after receiving expression of local views.

B. Location and General Description of the Area

The proposed KRNCA lies along the California coast 230 miles north of San Francisco, 70 miles south of Eureka, and 20 miles west of Garberville. While most of the Area is in Humboldt County, the southern-most three percent lies in Mendocino County.

The King Range Area comprises about 54,000 acres along the most rugged and isolated portion of the California coast. Long recognized as having unique significance because of its wild, rugged, relatively undeveloped nature, it takes its name from the high ridge traversing it northwest by southeast above its bluffs and beaches. Kings Peak, the highest point, rises to 4,087 feet within less than three miles of the ocean. Consequently, the most impressive features of the King Range are the relation of the mountains to the sea and the wilderness character of the land adjacent to the sea which sets the theme for aesthetic and recreational enjoyment. The unique character of this coastline is almost unduplicated

along the Pacific shore of this country. The high peaks provide views of the ocean and surrounding coastal mountains. Along the water are found black sand beaches and flats, sweeping abruptly up into timbered or talus slopes. Vegetation ranges from open grass or brush on the exposed ridges to old-growth Douglas fir in the draws and protected stream bottoms. On the exposed western slopes, Douglas fir takes on a gnarled and wind-blown form. Stands of hardwood are scattered along the coast at areas such as Big Flat.

The entire west-facing slope to the crest of the first ridge has been relatively untouched by man. The highway system generally follows the ocean shore until it approaches the King Range vicinity. Here, because the area was too rocky, rugged and precipitous for construction, the road swings a considerable distance inland.

C. Proposed Actions

The proposed actions consist of 1) development of a proposed management program, 2) establishment of the Area as a National Conservation Area, 3) proposed changes in the boundaries of the Area, and 4) promulgation of regulations relating to mining and land exchanges within an area. Each of these actions is described in detail in the report entitled "Management Program for the King Range National Conservation Area". A summary of each of the proposed actions is presented below.

1. Proposed Management Program

The King Range Act requires that the management program be one of multiple-usage and of sustained yield of renewable resources. The "resources to be considered are all of the natural resources including, but not limited to the soils, bodies of water including the shores thereof, forest growth including timber, vegetative cover including forage, fish, and other wildlife, and geological resources including minerals" [Sec 2(b)(7)]. The "uses to be considered are all of the legitimate uses of such resources including but not limited to all forms of outdoor recreation including scenic enjoyment, hunting, fishing, hiking, riding, camping, picnicking, boating, and swimming, all uses of water resources, watershed management, production of timber and other forest products, grazing and other agricultural uses, fish and wildlife management, mining, preservation of ecological balance, scientific study, occupancy and access" [Sec. 2(b)(8)].

a. Designation of Zones

The planning analysis indicates that the Area is geographically divided into two aspects that are sufficiently differentiated to form distinct major management sectors. The Pacific Slope, lying west of the main divide between Buck Creek on the south and Kinsey Ridge on the north, contains about 35,000 acres. The remaining 22,000 acres lie generally east of the main ridge on the western slope of the Mattole River drainage, including the drainages of Honeydew, Squaw, Bear and Finley Creeks.

Each of these major sectors was further subdivided into zones based upon a review of each resource by current use and potential for development. Tentative boundaries of such zones came into sharper focus as information was further evaluated. For example, the Shelter Cove area clearly was dominated by a residential use, the beach area by various types of recreation. Other areas were heavily forested or involved in past logging. Others were found to have especially critical habitat for endangered wildlife species.

The King Range Act states "...the plan will indicate the primary or dominant uses which will be permitted on various portions of the Area." However, it goes on to provide that "...secondary or collateral uses may be permitted to the extent that such uses are compatible with and do not unduly impair the primary or dominant uses, according to a seasonal schedule or otherwise."

Following the Act's zoning instructions closely, a total of seven primary use zones with basically topographic boundaries were identified and delineated based on resource inventory and preliminary planning information. These seven zones are shown on Map 2 with more detailed treatment in the individual zone maps at the end of this section.

Adjustments were made in boundaries of zones to allow for maximum utilization of the primary resource without a significant detrimental effect on adjacent zones' efficiency. For example, the West Slope zone boundary was shifted 1/4 mile below the ridge crest to the east rather than leaving it at the crest as first defined. This change greatly enhanced the West Slope recreation zone with practically no effect on wildlife habitat or sustained yield forest production in Zones 6 and 7.

Primary use management objectives for each zone were subsequently used in weighing tradeoffs and compromises in conflict resolutions necessary to design a multiple use management program. The Act's definition of primary or dominant use was read quite literally, with acceptance of other uses within a zone that were compatible or did not unduly impair the primary use. This provision permits considerable exercise of judgment. It proved wide enough to permit exclusion of cutting in recreational buffer strips and leaving dead trees for raptors in an intensive timber production zone, while permitting limited timber harvest in a wildlife habitat zone. Yet, it sharply limited many actions in a primitive recreation zone.

The zones are briefly described below:

Zone 1. Punta Gorda - This zone includes the old Coastguard lighthouse station and surrounding area.

Zone 2. West Slope - This zone is primarily the slope which drains directly into the ocean from the north boundary of the Area to the Shelter Cove subdivision area.

Zone 3. Shelter Cove - This zone mainly coincides with the area subdivided for residential development at Shelter Cove.

Zone 4. Point No Pass - This zone is little developed and lies to the south of Shelter Cove. The zone is characterized by steep slopes which extend to the ocean.

Zone 5. Whale Gulch - This zone forms the southern tip of the King Range Area, contains little public land and has numerous private owners.

Zone 6. Bear Creek - This zone is the Bear Creek drainage which is a tributary of the Mattole River. Included in the zone are many areas of logged over private land. The Bear Creek zone lies east of zones 2 and 3.

Zone 7. Honeydew Creek - This zone includes the Honeydew Creek drainage and part of the Squaw Creek drainage. Included is all land in the KRNCA east of zone 2 and north of zone 6.

b. The Proposed Plan

Following the Bureau's planning system, a general land use plan was developed to identify and resolve resource use conflicts between primary and secondary or collateral uses, to determine needed coordination between resource uses, and to establish an overall management direction for the area. A more detailed discussion of the plan is included in the Management Framework Plan and Coordinated Activity Plan for the KRNCA, and the Management Program which summarizes these documents along with program costs and timing. The zone maps at the end of this section show the more important proposed actions.

Since the program is presented by seven zones, eight resource categories, and six support functions, it is difficult to obtain a sense of the overall management program that is being proposed for the King Range National Conservation Area. Some summary generalizations and simplifications may be of value in advance of considering plans for individual zones:

- It is a zoned plan, developed around seven primary or dominant use zones. Yet, it is a multiple use plan, not only in the summation of the zones but within zones. Secondary uses are permitted that do not unduly conflict with primary use objectives. Through closely coordinated management many secondary uses can be accommodated.

- Tabulating the seven zones, one is devoted to intensive forestry, one for wildlife management and protection, three are recreational ranging from primitive through extensive to relatively intensive type use. Two are residential zones recognizing existing uses and their compatible limits.

- Yet, each zone is to be managed for a number of important secondary uses. The forestry zone, for example, has important watershed, wildlife, fisheries and recreational programs. Watershed actions, livestock forage, and fisheries improvements are in fact each prescribed as secondary actions in three zones. Actions that are primary objectives in one zone often appear as strong secondary programs in a neighboring zone. Mineral development will be permitted only where it will not unduly interfere with the primary use and only under regulations that provide a high degree of control and environmental protection. West slope zones, for example,

call for virtual exclusion of mineral development except for limited nonmechanized exploration. Table I below arrays the primary and secondary land use allocations by zones.

- To this must be added the support activities of land consolidation through 17,000 acres of acquisition, mainly through exchanging out of extremely scattered tracts; completion of the second half of an 87-mile road and 97-mile trail system; a protection plan for fire suppression, law enforcement and search and rescue; a new adequate radio communication system where none was available; and finally, identification of public property boundaries.

- Considerable external cooperation and coordination will be required involving two counties, four State agencies, two regional commissions, four federal agencies and two local coordinating committees.

TABLE I

ZONE SUMMARY

Zone	Primary Use	Secondary Use *	Acres (Total)	% NRL** as of 3/1/74
1	Recreation	Wildlife, livestock	254	24.1
2	Recreation	Watershed, wildlife, fisheries, livestock	23,031	80.2
3	Residential	Recreation	3,507	1.6
4	Recreation (Primitive)	Watershed	3,606	89.0
5	Residential	Recreation	1,276	12.9
6	Forestry	Watershed, wildlife, fisheries, recreation, minerals, livestock	12,047	52.9
7	Wildlife	Fisheries, forestry, watershed, recreation	10,458	63.3
		TOTAL	54,179	62.9

* This is not an exclusive listing; it only lists the major secondary uses.

** National Resource Lands (Public Lands administered by BLM)

(1) Area-wide and Multi-zone Actions

Many resource situations and programs prescribed to meet problems or develop opportunities are common to a number of zones within the King Range area. These planned actions and their underlying rationale are discussed in this section with a subsequent treatment in greater depth by specific zones provided where warranted.

Recreation - Several of the zones contain areas which appear to be of historical, archeological, or natural historic interest. These include such items as early settlers' cabins, ship wrecks, Indian campgrounds, Indian shell mounds, and areas which have unique values for ecological or biological studies. These have not been sufficiently studied to date to permit implementation of a meaningful interpretative program. Because specialized expertise in these fields is available from other agencies, organizations, or academic institutions, studies will be contracted in the following fields:

> Historical significance - The study will include literature search and site surveys.
>
> Archeological values - The study will include archeological surveys, surface sampling, test excavation, and analysis and publication of information.
>
> Natural history - The study will include identification of significant natural areas.

A site evaluation document will be prepared to summarize the findings of each of the various surveys. The Bureau will then contract for design of an interpretive program to make this information available to the public.

Regular patrols for protection of cultural values may be necessary depending on the information gathered by the survey and the amount of visitor use that occurs. A planned full-time administrator and temporary staff will be available for this.

In the event cultural sites are endangered by natural forces, visitor use, or development projects, they will be salvaged or stabilized, whichever is appropriate, based on a professional archeological analysis.

As a general rule, stabilization will be given priority over salvage.

Some activities such as grazing or off-road vehicle (ORV) use may need to be restricted near archaeological sites depending on the significance of the values found. Sites to be preserved will be identified with signs and protected with barriers or other appropriate means.

Surveys can begin immediately, but capital for protection or interpretation can be expended only on publicly-owned lands. Since many of the important sites are now on private lands, full implementation must be delayed until these private lands can be acquired.

Cooperative agreements will be developed with various state and county regulatory bodies, if necessary, to obtain and assure public access for recreation use to suitable lands within the Conservation Area.

Wildlife - As discussed in Section II A9 of this report, the presence of several threatened wildlife species within the KRNCA has been confirmed. However, details on their actual habitat are lacking. Therefore, habitat use by threatened wildlife species will be determined through a contracted study by the California Department of Fish and Game or California State University at Humboldt. Interim management guidelines pending completion of this study are discussed below and with the actions proposed for specific zones.

Raptors such as the osprey, peregrine falcon, and southern bald eagle, require areas relatively free from human disturbance to survive. This is particularly critical during nesting. Therefore, raptor habitat identified by these studies will be preserved as follows:

a. Preserve snags, flat-topped trees, or open-limbed live trees within a two-mile radius of any eagle or osprey nesting site.

b. Prohibit any disturbance that will result in an increase in human or mechanized activity within a 1½-mile radius of any peregrine falcon cliff nesting site.

c. Permit no logging, road construction, or intensive recreation development within 700 feet of any raptor nest, except road construction, logging, foot trails and primitive camps can be permitted from August 1 to February 1 within the protection area as long as there is no disturbance to the nest or other trees used by the birds.

d. Do not allow timber harvest, road construction or recreation development within 1/4 mile of Honeydew Creek, the Mattole River, Big Finley Creek and Bear Creek until the scope of use by bald eagle and osprey can be determined, except those activities in Zone 6 necessary to salvage timber damaged in the Finley Creek Fire of September 1973 or subsequent major fires.

e. Reserve the old-growth Douglas fir timber stand in the Honeydew Creek headwaters area until surveys show the importance of habitat for spotted owls, accipiter hawks (Cooper's hawk, goshawk, and sharp-shinned hawk), osprey and bald eagle.

Information signs will be installed at various points in King Range to inform visitors about wildlife species which they may encounter.

Fisheries - Log jams will be removed on 35 miles of streams. The preferred method of removal is with hand labor. California Ecology Corps crews are the least expensive, if available. In most cases, the use of heavy equipment is impractical due to difficulty of access and the stream disturbance caused by such machines. Exposed streambanks will be revegetated in connection with log jam removal.

Removal of log jams will make more of the streams available for spawning by anadromous fish species including steelhead, silver salmon and king salmon and will improve habitat for resident rainbow trout. The log jams are also causing streambank erosion by thrusting concentrated water flows against the banks. The resulting soil loss has contributed to sediment and deteriorated fisheries habitat in the streams. Thus, removal of the log jams will reduce the sediment loads of the streams.

Watershed - Over half of the King Range is in a stable erosion condition due to its heavy vegetative cover. Much of the remaining area, especially in logged and roaded areas found in Zones 2, 6, and 7 is undergoing accelerated erosion with a general trend of continued watershed deterioration. Prescribed watershed improvement measures such as waterbarring and revegetation of abandoned roads are aimed at arresting erosion before steep sideslopes are stripped of productive soils to bedrock. Such measures are also directed towards improvement of water quality by reducing sedimentation of streams, thus providing better fishery habitat and improved recreational values.

Timber - Forests and formerly forested lands capable of reforestation are common throughout most of the zones in the King Range. However, only a portion of the entire area, basically the east slope of the range in Zones 6 and 7, is planned for commercial timber production. Partial and selective cut systems are planned for a majority of timber operations. However, small (under 25-acre) clearcuts will be used where terrain and stand conditions dictate. The rather heavily forested but precipitous and erosive West Slope (Zones 2 and 4) was considered for timber harvesting under tightly controlled means, including helicopter and skyline logging, but has been excluded from such development after evaluating the need to protect other resource values. These forest areas will instead be managed to hold soil, protect watersheds, provide undisturbed wildlife habitat and serve as a scenic recreational backdrop while contributing to primitive values.

Minerals - Section 6 of the King Range Act recognizes that mining can be a valid activity in the KRNCA, but authorizes management of these activities to ensure they are compatible with the purposes of the Act and with the management program for the Area. The proposed mining regulations will be discussed later.

Mining will be permitted in all zones except the primitive area in Zone 4. In some areas where soils are extremely unstable or where aesthetic or other values are very important, any mineral activity will be stringently limited to methods which minimize surface disturbances. For example, the stipulations included in the authorization may limit exploration to nonmechanized means in prescribed areas.

Any newly located mining claims or prospecting activity will be examined during the interim pending issuance of new regulations to assure that all prospecting, exploration and development are carried out consistent with the management program. The locating of "nuisance" claims for recreation cabins or residences will be promptly investigated and appropriate action taken to terminate unauthorized uses. The claimant of all bonafide claims will be contacted and appropriate cooperative arrangements made for protection of surface resources.

The Bureau will work with the owners of the Bear Creek mining claims to develop a cooperative arrangement for rehabilitation of surface damage resulting from previous development of the claims. Such arrangements may involve mutual efforts or activity by the government.

Lands - To preserve aesthetic values, the Bureau will restrict utility rights-of-way to existing locations as much as possible and promote underground installation of distribution and transmission facilities. Unobtrusive location and treatment of overhead lines and station facilities will be sought. To achieve this, the Bureau will cooperate with utility companies in developing a plan to cover route location, type of facility, station siting, future need projections, timber removal, site rehabilitation after construction and other pertinent items.

Future needs for such special land uses as solid waste disposal sites and communication sites on higher peaks will be handled by coordinating with all interested parties and by updating the plan to consider such needs. The same cooperative planning approach, as outlined for rights-of-way, will be used to assure compatibility with the plan and protection of resource and aesthetic values.

Land acquisition, an integral component of the King Range program, while essentially a lands activity, is a support measure and will be discussed as such after first outlining the overall proposed resource management program. A discussion of the draft regulations to implement the acquisition provisions of the King Range Act is presented later in this report.

(2) Specific Actions by Zone

(a) Zone 1 - Punta Gorda (Map - page 48)

The primary use of this zone will be recreation. Most of the recreational activities will involve interest in the lighthouse and use of the beach by hikers and off-road vehicles. The following actions are planned which are compatible with this use.

Recreation - Land will be acquired along the beach in the immediate lighthouse area, to include the area from the high tide line to the toe of the slope or to the existing road, whichever is further east. Full ownership and control will make it possible to manage use so that conflicts between hikers and vehicle users are minimized, to prevent conflicts with property rights of private landowners, and to protect certain cultural features (e.g. Indian shell mounds).

To spatially separate competing or conflicting recreational uses and to protect scenic, natural or cultural values, the following areas will be established:

- Mechanized use areas (the beach area from the north end of Zone 1 to the lighthouse)

- Visual areas

- Cultural areas

- A parking area with water and basic toilet facilities in the vicinity of the lighthouse to prevent deterioration of the site due to unmanaged use.

Wildlife - Coastal and inland habitat, tidepools, beach, and off-shore rocks will be maintained in their present condition. Nonconsumptive uses of wildlife will be encouraged and improved through an interpretive program to identify marine birds, mammals, and tidepool species.

Visitors will be informed through signs and direct contact as to state and federal rules and regulations concerning marine wildlife species. Marine

mammals at Sea Lion Gulch will be protected by prohibiting vehicles south of the Punta Gorda lighthouse.

Livestock Forage - A grazing system will be implemented to permit seasonal use (June-Oct.) of 117 animal unit months. This season of use will result in increased vegetative cover. Stock will be controlled by fences which, along the beach area, will be designed to maintain scenic values.

Minerals - Any minerals activity in this zone will be restricted to the degree necessary to fully protect recreational, scenic and natural values.

The abandoned lighthouse at Punta Gorda
(Zone 1)

(b) Zone 2 - West Slope

The primary use of this zone is recreation. The major objective is to retain the wild and scenic values of the steep mountainous slopes facing the ocean and to preserve the unique character of the beach. The following actions are consistent with this objective.

Recreation - The present lack of legal public access to portions of this zone, especially along the coast, is limiting recreational enjoyment of the area. Therefore, public access will be acquired for recreational purposes to the following areas:

- Beach from mean high tide to the toe of the slope

- Spanish Ridge Trail

- Saddle Mountain Trail (formerly Coombs Road)

- Smith-Etter Road

- Coastal Streams

The following areas will be established to maintain and enhance the natural character of this zone.

- A nonmechanized use area to include the entire beach in this zone

- A limited development area to minimize disturbance to the primitive values that now exist along the beach and slopes facing the ocean

- A visual or scenic area to protect the aesthetic values of the area viewed from the beach and to maintain the unique primitive character of the beach

- Cultural areas needed to protect significant cultural values identified by the contracted studies

- Areas where existing road and trail use will be permitted

The following recreational facilities will be provided:

- Spanish Flat parking and primitive camping facilities
- King Crest trailheads

Land will be acquired at the Spanish Flat terminus of the Smith-Etter Road to provide the necessary parking area.

The unused nonhistoric buildings will be removed on Big Flat Creek and Shipman Creek and the corrals on Spanish Flat after possible historic values are determined by a contract study.

If required as a condition of acquisition, arrangements will be made for life estates with owners of cabins on Spanish Flat and the cabins will be removed when arrangements terminate.

Watershed - The following watershed improvement measures will be implemented to arrest deteriorating conditions:

- Provide cross drainage for 10.2 miles of abandoned roads and numerous skid trails. These will be in the form of waterbars and dips placed at intervals to prevent the accumulation of water and subsequent erosion.
- Outslope 5.6 miles of abandoned roads to prevent water accumulation and erosion.
- Revegetate 1,843 acres of areas exposed by logging with grass or woody plants, depending on soil type or other ground conditions.
- Rehabilitate slide areas where artificial or natural means are feasible.
- Stabilize 2,533 acres through increased vegetative cover provided by improved grazing management.

Wildlife - The present quality of beach and offshore habitat will be maintained, a Roosevelt elk herd reestablished, deer range improved, raptor cliff habitat maintained, and nonconsumptive uses of wildlife improved by implementing the following programs:

- Prohibit public motorized vehicle use along the beach and on west slope roads except the Smith-Etter Road, Telegraph Ridge Road and Saddle Mountain Road.

- Inform visitors about state and federal regulations and other information regarding wildlife species through signs and brochures.

- Through cooperative agreement with the California Department of Fish and Game, reintroduce and establish a herd of wild Roosevelt elk in the Big Flat area. The elk will be fenced during the introduction period and livestock will be temporarily excluded from the area used by the elk. The reestablishment of this magnificent species in a portion of their normal range will provide an interesting nonconsumptive wildlife resource. Limited hunting may be permitted in the future if a stable herd of sufficient size becomes established.

- Cooperate with CDF&G to increase the deer harvest in presently overpopulated areas.

Fisheries - Log jams will be cleared to halt streambank erosion, permit anadromous fish passage, and improve the aquatic habitat on Horse Mountain Creek and Gitchell Creek, as discussed in areawide decisions.

Livestock Forage - A grazing system will be implemented in this zone to permit seasonal (June-Oct.) use of 1105 animal unit months. This number considers the use by wildlife in the area and the effect of grazing on vegetative cover and soil erosion. The grazing system will require the construction of reservoirs and the development of springs in a manner which does not detract from the scenic qualities of the area.

Minerals - Any minerals activity in this zone will be restricted to the degree necessary to protect the zone's primary recreational value and its extremely unstable soils. Authorization of minerals activities such as exploration will stipulate nonmechanized methods in order to minimize surface disturbance.

(c) Zone 3 - Shelter Cove

The primary use of this zone has been and will continue to be residential. The Bureau plans only very limited acquisition of private lands within the zone because of the extensive subdivision that has taken place. Any acquisition program in this area would be extremely costly because of the many individual property owners (over 4,000), the high land values, and the reluctance of many owners to sell or exchange their property.

Black Sand Beach at Shelter Cove, the southern entrance to the Range. (Zone 3)

Recreation - The Bureau's management program for this zone is designed to provide recreational opportunities that are consistent with the primary residential use. To accomplish this, the following actions will be taken:

- Acquire public rights-of-way to the beach south of Telegraph Creek to Shelter Cove. Public access to this area is now limited because access to some areas is blocked by private land.

- Acquire and develop lands for Black Sand Beach and Point Delgada parking areas to provide a safe place for parking and to minimize conflicts with adjacent private lands. The Black Sand Beach parking area will include an information display board and restrooms.

- Develop a north trail, using the existing Shelter Cove Ranchos Road, but closing it to public vehicle use.

- Establish recreation use areas as follows:

    nonmechanized ocean beach use area (Little Black Sand Beach south to boat launch, approximately two miles)

    Mechanized ocean beach area (Telegraph Creek to Gitchell Creek, approximately three miles)

    Ocean fishing and observation area (Little Black Sand Beach south to boat launch, approximately two miles)

    Visual area (scenic background southeast of boat launch area)

The separation of mechanized and nonmechanized beach use is necessary because vehicles using the beach present a safety hazard and an annoyance to those using the beach for swimming, hiking, sunbathing, etc. Exclusion of vehicles from the nonmechanized use area will also reduce conflicts with the private landowners of the Shelter Cove subdivision.

The existing boat launching area will continue to be privately owned and managed. Because nearly all lands in this zone are privately owned, limited acquisition of selected parcels or easements will be required before the proposed management program can be implemented.

(d) Zone 4 - Point No Pass

The primary use of this zone is recreation. The major objective is to preserve the primitive qualities of this zone.

Recreation - This area will be managed to provide opportunities for solitude. Extensive recreation uses such as hiking and primitive camping will be encouraged, but no camping facilities will be provided within the zone.

The present trail system through the area will be realigned near the crest to provide better views of the ocean. Extension of the present trail system to permit connection with possible future trails in the proposed Bear Harbor State Park to the south of Whale Gulch, as well as alternative loop routes within the zone, will be studied and surveyed.

Self-guided interpretive walks will be developed between neighboring campgrounds and the Chemise Mountain segment of the present King Crest National Recreation Trail System.

Watershed - Since the present watershed condition is satisfactory, no specific program is required. However, rehabilitative measures may be required in case of fire or other disturbance of the vegetative cover.

Forestry - No logging will be permitted. This prohibition includes salvage logging of burned areas. However, limited actions to control insects or disease may be allowed if other commercial forest lands are threatened and the action will not significantly detract from the primitive qualities of the zone.

Lands - To protect its primitive qualities, the zone will be officially designated as a primitive area. All private lands in the zone are programmed for acquisition to prevent future logging, subdivision, or other incompatible uses.

Minerals - Development for mineral production involving surface disturbance is not compatible with the maintenance of primitive values in this zone. Information gathering through prospecting and exploration may be permitted under tightly stipulated conditions including restriction to use of nonmechanized means. However, any proposed development that risks degradation of natural values will not be permitted.

(e) Zone 5 - Whale Gulch

The primary use of this zone is residential. Most of the lands are now owned by a number of private individuals and there are a number of full-time residents.

Lands - No acquisition is presently planned in this zone. However, if properties become available that are contiguous to national resource lands and useful from an ownership consolidation and resource management aspect to contribute to KRNCA objectives, some private holdings may be acquired. If private lands are acquired, they will be managed to prevent deterioration of the watershed and may be used for possible expansion of the Primitive Area in Zone 4.

(f) Zone 6 - Bear Creek

The primary use of this zone is intensive timber production. The objective is to maximize timber production while managing the forest and other resources on a sustained yield basis. Actions consistent with this objective will be taken as follows:

Forestry - Inventory data show an annual allowable cut potential of 1.9 million board feet (Int. 1/8" scale)* from BLM lands in Zones 6 and 7 combined.** This volume for the first five years will be taken from the Bear Creek Zone.

Within the total area in both zones planned for commercial timber production, cutting practices and logging methods will be designed to match terrain, soil and stand conditions. As noted earlier, approximately 60 percent of all timber harvest area will be harvested by partial cutting or selective systems. The remainder will be logged in small clearcut units not to exceed 25 acres in size. Specific equipment to be used ranges from tractors on gentler slopes to highlead cable methods in steeper areas. In some areas where minimization of soil disturbance is especially important, elevated skyline or helicopter logging is planned.

Other projects planned for the first five years are:

- Planting trees on 440 acres. In addition to this, cutover private lands will be planted as they are acquired.

- Hardwood-brush conversion and planting 320 acres

- Precommercial thinning - 50 acres

- Multi-purpose road construction - 8.0 miles

- Timber sale road construction - 16.7 miles

Projects for planting, stand conversion, and road construction may be altered if significant fires occur or further environmental analyses indicate changes should be made.

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* A standard industry measure reflecting current sawtimber utilization standards; e.g. 1/8" width saw kerf.

** 2.4 million board feet when both BLM and private forest lands are considered.

Watershed - This zone has some of the most serious watershed problems in the KRNCA due to past logging and road building, primarily on private land. To improve present conditions and halt continued deterioration, the following measures will be taken:

- Provide cross-drainage, outsloping, seeding and fertilizing of 190 miles of logging roads and skid trails to stabilize 658 acres of seriously disturbed watershed now producing 13 acre-feet of sediment annually.

- Improve drainage on approximately 6 miles of existing road by installing additional culverts and downspouts and seeding cutbanks.

- Rehabilitate small slide areas that can be treated by revegetation in conjunction with the correction of related road drainage problems.

- Reduce numbers of livestock on grasslands in the Paradise Ridge area to eliminate overuse resulting in loss of vegetative cover and soil erosion on 316 acres.

- Cooperate with owners of Queen Peak Mine on the Bear Creek claims to arrest erosion of the mining area by providing better cross-drainage and revegetating disturbed areas.

Vegetative buffers will be left along streams during timber harvest operations and waste material will be end-hauled in road construction to keep this material from entering streams in order to protect water quality.

Livestock Forage - Paradise Ridge is the only area in Zone 6 used for livestock grazing. Vegetative conditions are presently deteriorating due to competition between livestock and wildlife. Livestock grazing will be reduced until vegetative conditions have improved enough to support both wildlife and livestock without contributing to the previously noted watershed problem.

Wildlife - Wildlife habitat improvement and stand conversion projects in this zone will provide additional wildlife forage and open more area for

hunting, making the clearing of travel lanes unnecessary.

Hunting and nonconsumptive wildlife uses will be increased in the Queen Peak area by improving the existing jeep road. Since this road is also needed for timber harvest and recreation access, a multipurpose road will be constructed.

A test controlled burning and reseeding study project will be conducted in a 64-acre stand of dense, tall chaparral brush and hardwoods within this zone. Safe, successful results could permit other heavy brush areas to be converted to better wildlife habitat and forage conditions.

Fisheries - Log jams blocking anadromous fish runs in the Bear Creek Drainage will be cleared using the least damaging method, hand labor, through a source such as the Ecology Corps, if available. Where possible, angler access will be concurrently improved along streams by removing barriers to foot travel.

Stream sedimentation will be curtailed by close control of logging and road construction as well as the watershed rehabilitation previously outlined.

Recreation - Public rights will be acquired for recreation purposes through rights-of-way in the South Fork Bear Creek and Paradise Ridge areas and by cooperative hunting agreements in the Paradise Ridge area.

The following recreation actions will be taken:

- Existing roads and trails in the Queen Peak - Paradise Ridge area will generally be left available for trail bikes and four-wheel drive vehicles. However, areas showing serious erosion due to vehicle use will be closed and rehabilitated. These may be reopened later if management of use, such as wet weather closures, will prevent further erosion.

- A trail connecting Wailaki campground with Tolkan campground will be developed along Bear Creek.

- The present campground areas will be maintained at their present standard except for the development of a water system for Tolkan campground. Additional expansion is not necessary at this time. The potential recreation site at Nooning Creek will be reevaluated following salvage operations in the area burned by the Finley Creek fire in September 1973.

- Buffer areas of 1/4 mile around recreation sites and 200 feet along recreation roads and trails will be established, in which timber harvest is restricted to selective cutting only and other activities are restricted to maintain scenic values in this zone.

Lands - As a support action, over 4,317 acres of private lands, much of it logged over but capable of intensive sustained yield timber management, are planned for acquisition to consolidate ownership, facilitate forest management and permit important investments in watershed, fisheries and wildlife habitat improvement.

(g) Zone 7 - Honeydew Creek

The primary use of this zone is management of wildlife habitat. The major objective is to preserve and enhance wildlife habitat in the zone with particular emphasis on diminishing, threatened, or potentially threatened species such as the spotted owl.

Wildlife - To meet the management objective of this zone, the Bureau will maintain the old-growth forest habitat at the head of Honeydew Creek by excluding timber harvest, road construction, vehicle use or intensive recreation development until the extent of spotted owl, red-back tree mouse, osprey, accipiter hawks, bald eagle, flying squirrel, cougar and black bear dependency on this forest habitat can be ascertained. A full inventory will be conducted to verify the presence and extent of habitat use by these species.

Hunting and nonconsumptive uses of wildlife in this zone will be improved by obtaining public access over the Smith-Etter Road. Physical access will be

provided for hunter and wildlife observation use by completing 16 miles of 10-foot wide brush openings and 1¼ miles of forest trail openings 6 feet wide; opening 6 miles of road for four-wheel drive use; and redesigning one mile of existing road for use by all classes of vehicles.

Brush openings developed for wildlife observation will be reseeded with suitable forage vegetation.

The Bureau will consider controlled burning for brush control and/or brush conversion reseeding on selected sites after evaluating the burning trial study planned in Zone 6.

Fisheries - Objectives and planned actions are similar to Zone 6. Log jams causing erosion and blocking anadromous fish passage on streams within the zone will be cleared, preferably by hand labor through the Ecology Corps, if possible. Fisherman access obstructions along streams will be concurrently cleared, where feasible.

The watershed and forestry program will be relied upon to reduce sedimentation reaching stream courses.

Forestry - As previously noted, timber inventory data shows an annual allowable cut potential of 1.9 MMbf (Int. 1/8" scale) from BLM lands in Zones 6 and 7 combined. However, no timber sales are planned for the first 5 years in Zone 7 so wildlife indigenous to old-growth stands may be inventoried to determine the presence and extent of habitat use. This inventory will provide additional management guidelines for the various resource activities. As old-growth stands in Zone 7 represent less than 10 percent of the overall allowable cut potential, a downward adjustment can easily be made in the average annual timber harvest if subsequent wildlife inventories indicate a need to preserve these stands as habitat.

Timber management projects in Zone 7 for the first five years will be limited to:

- Hardwood-brush conversion and planting - 80 acres

- Multi-purpose road construction - 2.5 miles

- Plant trees on cutover private lands as they are acquired.

Watershed - The present conditions will be improved and further deterioration will be prevented by taking the following actions:

- Provide cross-drainage, outsloping, seeding and fertilization of 156 miles of logging roads, skid trails and other roads now constituting 535 acres of severely disturbed watershed.
- Reestablish forest on 274 acres of forest soils converted to grass by logging, burning and repeated sheep grazing, fencing out this area from grazing during the reforestation project.
- Improve drainage on approximately 16.4 miles of maintained roads by installing additional culverts and downspouts and seeding cutbanks.
- Rehabilitate and restore vegetative cover on 2.4 miles of abandoned roads.
- Rehabilitate small slide areas which are feasible for treatment.

Hiking the King Crest Trail (Zone 2)

Recreation - Public rights will be acquired for recreation uses on the Smith-Etter Road, including the part outside the King Range boundary; the Telegraph Ridge Road; and for extension of the Lightning Trail down Honeydew Creek.

Cooperative agreements will be developed to provide public hunting on private lands in the Bear Trap Ridge and Moorhead Ridge areas.

Existing roads will remain open for recreation vehicle use. However, if a road is or becomes seriously eroded, it will be closed and revegetated. These roads may later be reopened if use can be managed to prevent further erosion through such means as season of use restrictions.

The extension of the trail down Honeydew Creek is a possibility that will be considered in the future if increased recreational use creates a need.

Recreation facilities to be considered for this zone are toilets and garbage containers at areas of concentrated use.

Buffer areas 200 feet wide will be established along recreation roads and trails in which timber harvest is restricted to selective cutting only and other activities are restricted to maintain scenic values.

Lands - Approximately 2,912 acres are planned for acquisition in this zone to consolidate ownership and provide more efficient resource management while permitting the type of investments needed to achieve plan objectives. Most of the lands to be acquired are logged over, often brush covered, with potential for intensive forest management or wildlife habitat conversion while correcting critical watershed problems.

(3) The Support Activities

This section summarizes the actions that are needed to support implementation of the resource management plan. In some cases, it provides more comprehensive treatment of support actions touched upon briefly in the preceding zone summaries. Other support activities, not previously identified, are also treated in this section.

(a) Land Acquisition

The King Range Act authorizes acquisition of private lands that are "desirable for consolidation of public lands within the Area in order to facilitate efficient and beneficial management of the public lands or otherwise to accomplish the purposes of this Act."

The land acquisition program was actually begun in 1972 when it became apparent that activities on private lands such as additional subdivisions and logging were imminent. Such actions threatened to detract significantly from the values of the Area and limit management opportunities.

Criteria were established for the acquisition program, delineating eight priorities. The highest priority was given to acquisition of those private lands near the ocean on which logging or subdivision appeared to be imminent. Although the acquisition program is directed toward the higher priority tracts, some necessary but lower priority lands are being acquired from owners willing and able to quickly consummate exchanges.

The land acquisition effort is an especially critical support activity for implementation of the proposed King Range National Conservation Area management program as much of it relies heavily on consolidated management efficiencies and BLM tenure to permit capital investments in land management.

For discussion of the acquisition program, the Area can be divided into two general areas: (1) the western slopes generally facing the ocean (Zones 1, 2, and 4) and (2) the east slopes generally facing inland (Zones 6 and 7). No major acquisitions are planned in Zones 3 and 5.

In the first category, the emphasis is on providing public access to and enjoyment of recreational lands within these zones and minimizing conflicts between the public users and the rights of private property owners. Another primary objective of the acquisition program in these zones is to prevent uses that would be incompatible with the unique values and management objectives for this area. Other lands must be acquired to permit implementation of specific portions of this management program where capital investments must be made or where large consolidated blocks of public ownership are needed.

In the east slope, inland portion of the area, the emphasis in the acquisition program is on consolidation of land ownership for more effective resource management. For example, a long-term sustained yield forestry program is complicated where ownership is highly fragmented. Stream clearing and watershed rehabilitation are not effective unless all lands contributing to the problems can be treated in a coordinated manner. Lands must also be acquired where capital investments must be made and so that competing resource uses can be managed. For example, livestock grazing must be restricted where it is causing deteriorated wildlife habitat conditions. Consolidated ownership also makes management of recreational uses more effective because people can know when they are on national resource lands.

With 3,668 acres of private lands acquired through March 1, 1974, there are now 20,104 acres of privately owned land remaining within the boundaries of the KRNCA, as compared to a total 54,199 acres of all ownerships. The acquisition program is scheduled to be essentially completed by the end of fiscal year 1978, when a total of approximately 6,500 acres will remain in private ownership. These remaining private lands will be primarily concentrated in Zones 3 and 5. Any significant change in the acquisition program will require extensive revision in the plan due to the involvement of resource management investments which require assured land tenure.

A summary of the acquisition program by year is given in Table 3. Acquisition will largely be accomplished by exchanging scattered national resource lands in Humboldt County outside of the KRNCA for private lands within the Area. Exchanges are made

on the basis of equal values; however, cash payment may be made by either party to equalize values, provided that the acquisition payment may not exceed one-third of the appraised value of the more valuable parcel. In total, national resource lands worth approximately $7,500,000 are expected to be exchanged for private lands worth approximately $6,650,000, with the difference being made up by cash payments to the government.

TABLE II - SUMMARY OF PLANNED LAND ACQUISITION

F.Y.	Acres to Be Acquired	Acquisition Costs* LWCF**	BLM	Total Acquisition Costs
Thru 1973	1,434	$374,000		$374,000
1974	6,007	394,000		394,000
1975	8,511	221,500	$31,000	252,500
1976	820	116,000	27,000	143,000
1977	214	100,000	39,500	139,500
1978	209	-	69,000	69,000
1979	-***	-	58,000	58,000
1980	-***	-	32,000	32,000
Total	17,195	$1,205,500	$256,500	$1,462,000

* Includes administration, appraisals, equalization payments, purchases involving $284,000, $570,000, $182,000, $400,000, respectively. A 5% annual cost inflation factor is included.

** Land and Water Conservation Funds are being provided to cover tracts with significant recreational values that have been cleared through the Bureau of Outdoor Recreation.

*** No acres planned at this time, but limited funding is programmed to cover any carryover and reappraisal or renegotiation costs due to schedule delay.

(b) Transportation

A road and trail system is necessary to implement portions of the management program. The major existing roads and trails, and those identified as being needed within the first five years the plan is in effect, are shown on the zone maps at the close of this section. Precise locations of the proposed roads have not been surveyed and marked on the ground, so some changes in proposed routes may be required after further engineering and environmental studies are made.

Narrow, quiet roads lead the traveler through the King Range. (Zone 6)

Presently there are 50 miles of existing road within the King Range. While 60 percent of this total mileage is currently under BLM control, only 13 miles meet present BLM standards. There are 48 miles of trail now traversing the area, primarily constructed by BLM. Projected additional road construction needs total 37 miles with varying amounts of improvements needed on nearly 30 miles of the existing road system. Some 49 miles of new trails and improvements on 28 miles of existing trails are planned to complete the trail system.

More detailed treatment of the road and trail system is provided in the Coordinated Activity Plan, Appendix H, the Transportation Plan.

(c) Protection

Fire - Protection in the KRNCA is provided by the California Division of Forestry (CDF) under a long-standing contract. The study of fire protection needs analyzed existing conditions, the changes in risk and hazard anticipated when the plan goes into effect, and the array of possible fire protection measures. The plan provides for increased fire prevention patrols, increased attention to reduction in fire hazard on recently logged areas, brush conversion coordinated between hazard reduction and other plan objectives, and construction of helipads to improve initial attack response time. A major feature of the fire plan requires the District Manager's approval prior to using mechanized equipment on the steep, damageable slopes of Zones 2 and 4. Mechanized equipment will be used only in extreme emergencies and under close supervision. Coordination with CDF will be necessary in developing the annual operating plans for this area.

Law Enforcement - The Mendocino and Humboldt County Sheriff's Departments are the primary law enforcement agencies for their respective jurisdictions within the King Range National Conservation Area. Wardens of the California Department of Fish and Game enforce fish and game laws in the Area. The California Highway Patrol has a primary duty of traffic law enforcement on state highways but could respond in an emergency if a sheriff's office requests help.

Fire protection and law enforcement on private lands within the KRNCA will remain the responsibility of local authorities. The Bureau will coordinate its programs with those of local and state protection and enforcement agencies.

Search and Rescue - County sheriffs in California are designated as search and rescue coordinators in each county. Both Humboldt and Mendocino

Counties have organized search and rescue units as well as a cooperative agreement for joint operations. Designated BLM personnel assigned to KRNCA will be trained in search and rescue techniques to be available to provide assistance in such operations within the KRNCA.

(d) Communications

In a time when instantaneous worldwide communication is possible, this kind of service is not available in remote areas such as the King Range. An analysis was made of communication needs, taking into account possible search and rescue operations and long-range management needs. A radio system will be installed to link the Ukiah District headquarters, the proposed King Range administrative site and the personnel assigned to manage the area. It will be designed to also permit ready two-way communications during emergency operations with county sheriff's radios and the radio system of the California Division of Forestry.

(e) Administrative Sites

The Ukiah District Office is over 100 miles from King Range. To effectively manage the intensity of development proposed in this plan, it will be necessary to station personnel closer to the area. Considering travel routes and availability and suitability of sites, as well as proximity to primary management activities, two sites will be acquired and developed for administrative use.

The main administrative site will be constructed in the vicinity of Thorn Junction on the Shelter Cove Road and will be managed by a full-time resident administrator. A seasonally manned visitor contact facility will be developed as a part of the administrative headquarters and will contain exhibits and displays depicting the history, pre-history, natural history and multiple uses of the King Range. This facility will serve to provide information to visitors concerning the King Range Area, its resources and management,

outdoor recreational opportunities, applicable laws or rules, and any special precautions for safety due to prevailing conditions. Educational publications pertaining to King Range and natural resource management will also be available for sale or free distribution.

The administrative site will also house equipment for maintenance of roads, trails, and recreation facilities and fire suppression equipment in support of its function as resource management headquarters.

The smaller administrative site at Honeydew will be manned during the visitor use season and be designed to function as an unmanned station after hours and during the off season.

(f) Cadastral Survey

Effective management requires that the external boundaries of the King Range National Conservation Area and internal property boundaries between public and private lands be accurately located and clearly marked. This will facilitate the Bureau's programs by ensuring that resource product sales or capital improvements are made on publicly owned lands. This will also permit the public to know the boundaries of national resource lands and thus minimize conflicts with the property rights of adjacent private landowners. This is especially important where there will be concentrations of recreational users.

2. Establishment of the Area

Section 1 of the King Range Act directs the Secretary of the Interior, after compliance with Section 3 and 4 of the Act, to establish the King Range National Conservation Area within the boundaries described by the Act. Section 3 requires the preparation of a "program of multiple useage and of sustained yield of renewable natural resources." This program is summarized in the preceding section of this report. Section 4 of the Act then states that the "Secretary shall establish the Area after a period of at least ninety calendar days from and after the date he has (1) submitted copies of the program required by Section 3 to the President of the Senate and the Speaker of the House of Representatives, the Governor of the State of California, and the governing body of the county or counties in which the area is located and, (2) published a notice of intention to establish the Area in the Federal Register and in at least two newspapers which circulate generally within the Area."

In addition to these specific statutory requirements, it was determined that an Environmental Impact Statement was required by the National Environmental Policy Act.

The ninety-day waiting period required by Section 4 of the Act will expire on September 11, 1974. However, no action can be taken until at least thirty days following the publication of the notice of availability of the final environmental statement in the Federal Register.

Establishment of the King Range National Conservation Area will require an administrative action by the Secretary of the Interior. The action itself will consist of a Secretarial Order which is published in the Federal Register.

3. Proposed Boundary Changes

The Act requires that the management program for the proposed conservation area include recommendations as to the boundaries of the area. The boundary of the planning area defined by the Act is shown on Map 2. The same boundary was found to be suitable for the conservation area with several exceptions.

Section 9(a) of the Act, in delineating the survey and investigation area for planning purposes, establishes a separate 254-acre area surrounding the Punta Gorda lighthouse.

This area lies approximately two miles below the mouth of the Mattole River and three miles above the northern boundary of the main King Range Area.

In order to provide the full protection of the King Range Act, to assure compatible uses of private lands and facilitate management, we propose that the Area boundary be extended as shown on the large fold-out KRNCA map at the close of this report.

Inclusion of the area along the south bank of the Mattole River, from approximately one and one-half miles above its mouth, and extending south to Punta Gorda in a strip approximately three-quarters of a mile in width (between the beach and logical inland survey subdivision lines) will ensure better control of visitor vehicle use from the county road than is now provided by the narrow access route along the old Coast Guard road location. Continuation of this three-quarter mile wide shoreline strip from Punta Gorda south to the main King Range Area will provide better management control along the foot-access route planned along this stretch. Access in this area is planned to be by easement, but compatible adjoining land use is essential.

Very little additional acquisition of private lands is planned in this area. The boundary expansion is primarily designed to obtain the same degree of protection to assure compatible use on private lands with adjoining public uses and values that is provided throughout the King Range National Conservation Area. Only a limited area along the Mattole River needed for camping and parking area construction is planned for acquisition.

One forty-acre tract in Zone 6 (NW¼NW¼ Sec. 36, T. 4 S., R. 1 E.) within the KRNCA study boundary was inadvertently omitted in the Section 9(a) description. This omission could allow incompatible uses to develop on this uncovered inholding. We recommend correction of this oversight.

We also propose the inclusion of a forty-acre tract of national resource land (SE¼SE¼, Sec. 19, T. 5 S., R. 2 E.) contiguous to other public land within the present boundary at the headwaters of Whale Gulch in Zone 4. This minor boundary modification will facilitate more efficient management and provide uniform protection to closely related lands.

Legal descriptions of the proposed boundary revisions and further rationale are provided in Appendix G to the Coordinated Activity Plan. The additional area involved totals 3,066 acres.

These changes in the boundary will require Congressional action to amend the King Range Act. If the proposed boundary change is made by Congress, the Management Program proposes the following actions:

- Acquisition of access by easement within the proposed boundary expansion area between the Mattole River and Punta Gorda and the coastal strip connecting Punta Gorda to the main body of the KRNCA to the south.

- Establishment of a nonmechanized use area along the beach south of the lighthouse to the northern boundary of Zone 2.

- Development of parking, picnicking, and camping areas near the mouth of the Mattole River.

- Any minerals activity in the expansion area from the Mattole River to the northern boundary of Zone 2 will be restricted to the degree necessary to fully protect recreational, scenic, and natural values.

- Establishment of a mechanized use area from the Mattole River to the lighthouse.

4. Proposed Mining and Land Exchange Regulations

The King Range Act (PL 91-476) provides that the Secretary may establish reasonable mining regulations to safeguard scenic and aesthetic values and protect water quality. It also provides authority for acquiring lands or interest in lands through purchase or exchange. Proposed regulations have been drafted to implement these provisions of the law. The provisions of these drafts include:

(a) 43 CFR 2273

The amendment provides that the authorized officer may accept title to nonfederal lands within the KRNCA and may convey public lands to the grantor of nonfederal lands and interests in lands, subject to several provisions:

(1) The public lands offered for exchange must lie in Humboldt and Mendocino Counties and must have been classified for exchange.

(2) If the lands offered in exchange are at least equal to two-thirds the value of the selected lands, payments may be made to equalize the value differential. Equalization may also be made by posting of deposit or bond, assuring that additional lands at least equal to the difference in value will be conveyed to the government.

(3) When minerals are reserved in lands conveyed by the United States, persons prospecting or removing minerals shall be liable to the surface owners for any actual damage to the surface or improvements.

(b) 43 CFR 3827

This proposed addition of Subpart 3827 establishes rules and procedures for prospecting, location of a mining claim, annual assessment work, exploration and development and other mining operations in the KRNCA. Provisions of the Subpart include:

(1) Before commencing any of the above mentioned activities, a plan of operation must be filed and approved by the authorized officer. The plan must include copies of location notices and notices of assessment; name and address of the operators and owners; a description of the area of operations; a description of access routes, existing and proposed roads, and means of transportation to be employed; a list of equipment and a description of facilities to be employed in the operations; a map or sketch of areas where disturbance of vegetation or soils is anticipated; a description of environmental effects and the effects on forest resources; and a description of the measures that will be employed to minimize the environmental impacts of the operators.

(2) In cases where a plan for prospecting or location of a claim has been approved by the authorized officer, he may subsequently deny approval of plans for exploration or mineral development if such operations impede the primary use of the zone or unduly impair environmental values.

(3) An environmental statement may be required prior to approval of operation plans, supplemental plans, or modifications of plans, where operations are on lands identified as "primitive" in the King Range Management Program.

(4) Access to the area of operation will be in accordance with an application filed with, and approved by the authorized officer.

(5) A minimum performance bond of $100 will be required for all operations, except in the case of prospecting where there will be no surface disturbance.

D. Relationship to Other Proposals, Plans and Projects

The King Range National Conservation Area is not contiguous to other national resource lands administered by the Bureau of Land Management. However, resources of the KRNCA play a role in the Bureau's total program in the Ukiah BLM District and the Management Program must be considered in this larger context. The national resource lands in the KRNCA, approximately 34,000 acres, currently constitite 8% of the total acreage in the Ukiah District. Planned acquisitions will increase federal ownership to about 48,000 acres by 1978 and at that time lands in the KRNCA will be slightly under 11% of total national resource lands in the District.

While a new districtwide timber inventory is currently under way and will result in a revised allowable annual cut, the old inventory estimated the district's allowable cut at 20 million board feet. The KRNCA contributed over 9 million board feet of timber during the period from 1964 to 1966, but there have been no recent timber sales in the Area. The Management Program estimates the sustainable annual cut in the KRNCA at 1.9 million board feet, or about 10 percent of the current district allowable cut.

The State Water Resources Control Board has designated the nearshore waters of the KRNCA as an Area of Special Biological Significance. Under this designation waste discharges that alter the natural water quality of the area are prohibited.

The Coastal Zone Conservation Act, passed as an initiative in the November 1972 General Election, provides for protection of the California coastal zone. It established a

statewide commission and six regional commissions, who were charged with development of a plan for conservation of the natural resources of a zone extending seaward to the limits of the State's jurisdiction and inland to the crest of the nearest coastal mountain range. It also requires a permit prior to initiating development in an area extending inland 1000 yards from the mean high tide line.

The North Coast Regional Commission has jurisdiction over coastal lands within Del Norte, Humboldt, and Mendocino Counties, an area which includes King Range. As defined by the regional commission, the planning area extends inland for a considerable distance and includes the entire KRNCA. The permit area extends to the crest of the King Range, as interpreted by the North Coastal Regional Commission.

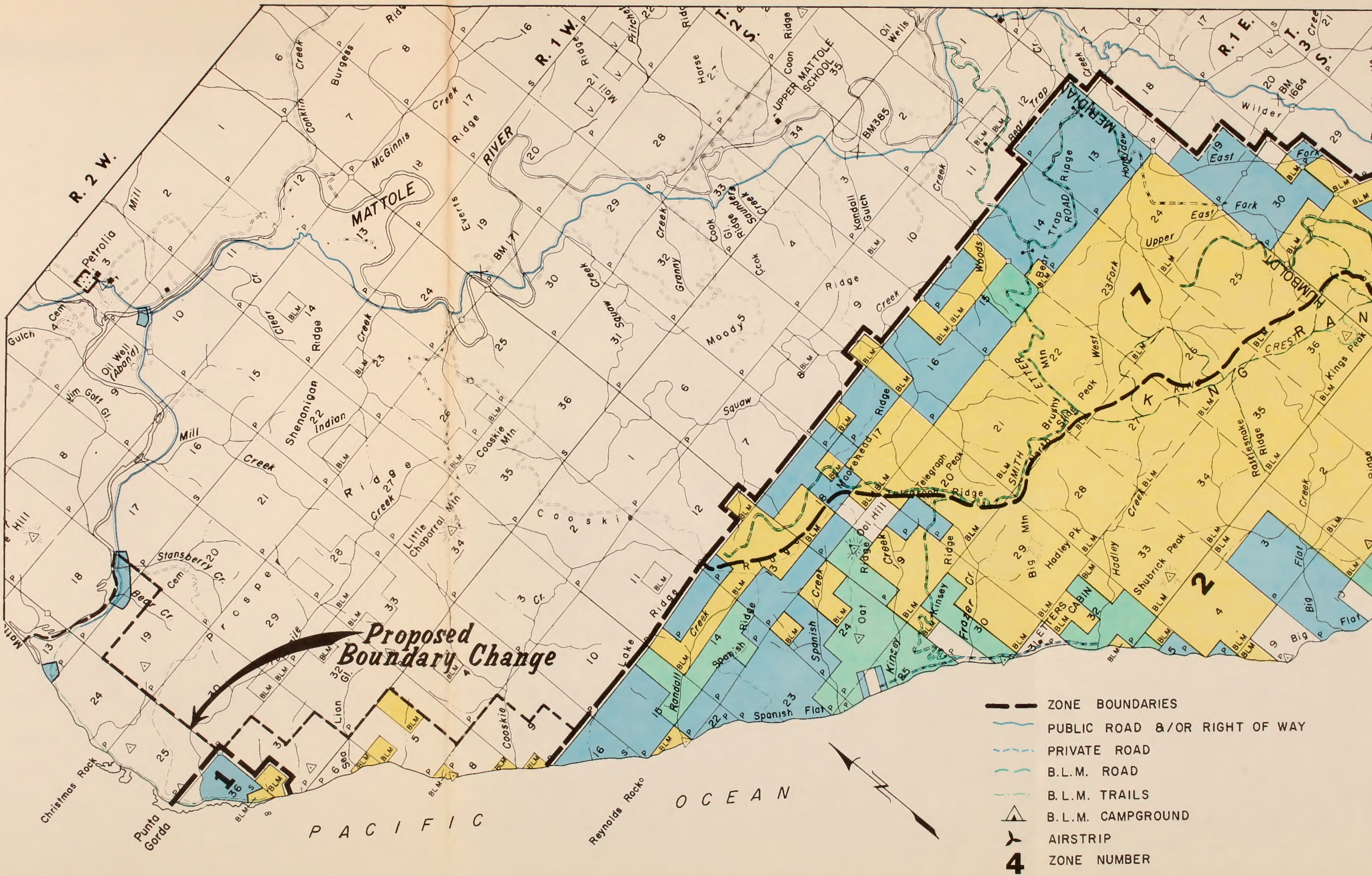
While the North Coast Regional Commission has declined to take a position on the Management Program until their inventory of resources is complete, there has been close coordination between the Bureau and the Commission during development of the program, and because of the similarity in goals of the King Range Act and the Coastal Zone Act, continued close cooperation is anticipated.

The Coastal Zone Management Act of 1972, administered by the Secretary of Commerce, requires in part that federal agencies conducting activities affecting the coastal zone, conduct such activities in a manner consistent with state management programs.

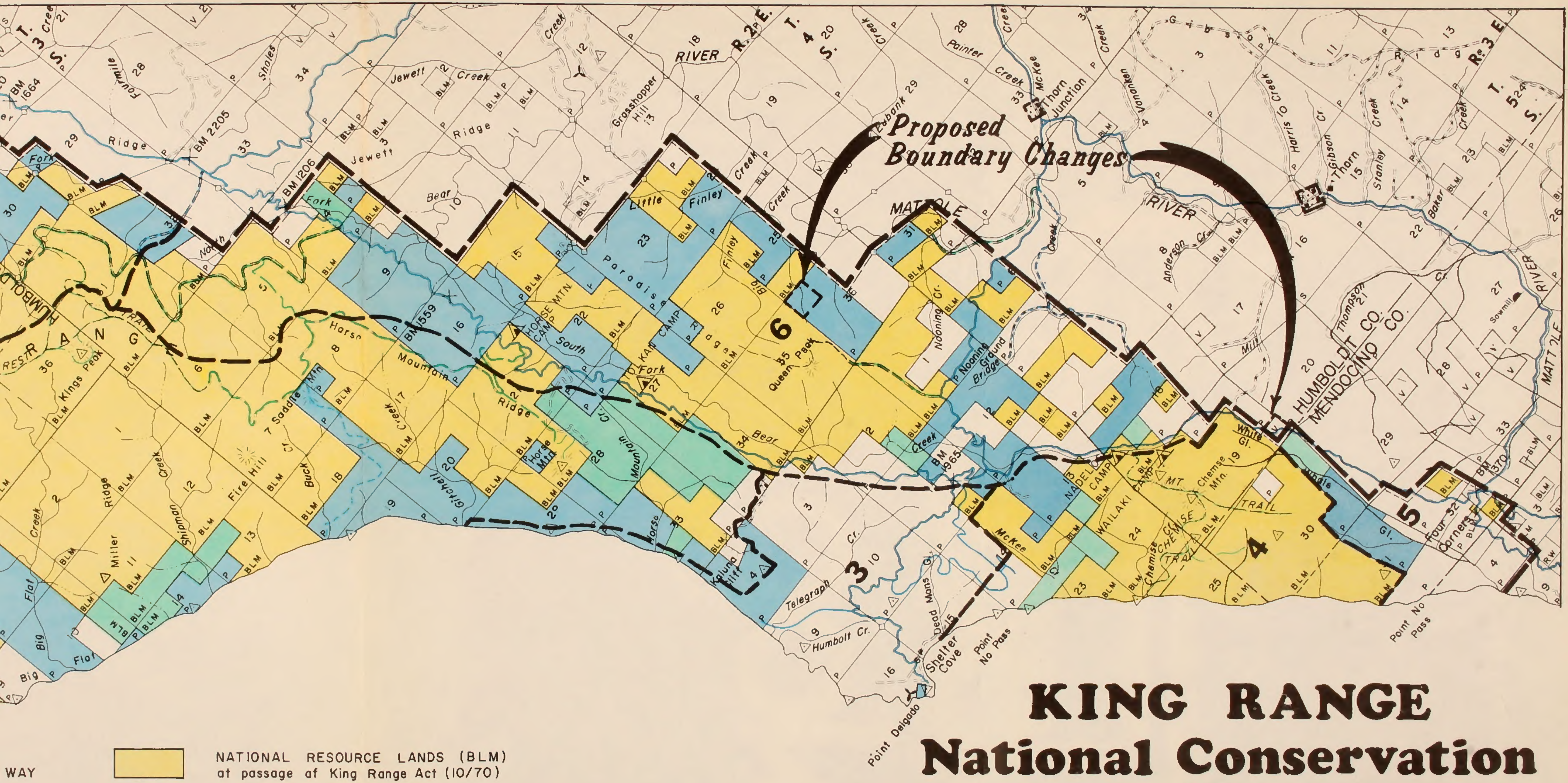
The area between mean high tide and the seaward extension of the state's three-mile jurisdictional limit is managed by the State Lands Commission. Lands between the three-mile limit and the limits of United States jurisdiction are administered by the Los Angeles Outer Continental Shelf Office of the Bureau of Land Management.

Plans for recreational development within the KRNCA are consistent with the state's general recreation plans, including the State Comprehensive Outdoor Recreation Plan (SCORP) and the California Coastline Preservation and Recreation Plan. The KRNCA falls within the boundaries of District 1, California Department of Parks and Recreation.

The U.S. Bureau of Sport Fisheries and Wildlife, on December 18, 1973, applied for withdrawal of unreserved islands, rocks and reefs from Oregon to Mexico preparatory to establishing a California Island National Wildlife Refuge. Several hundred of these rocks are located off the King Range.



R. 2 W.
R. 1 W.
R. 1 E.
T. 2 S.
T. 3 S.
Petrolia
Cem
Gulch
Oil Well (Abond)
Jim Goff Gl.
Mill
MATTOLE
RIVER
McGinnis
Burgess
Conklin
Creek
Clear Cr.
Shenanigan Ridge
Indian
Everts
BM 171
Squaw
Granny
Cook
Gl Ridge
Squaw Creek
Harse
UPPER MATTOLE SCHOOL
Coon Ridge
Oil Wells
BM385
Kandall Gulch
Moody
Cooskie Mtn.
Little Chaparral Mtn
Prospect
Stansberry Cr.
Bear Cr.
Cooskie
Lion Gl.
Sea Lion
Lake Ridge
Randall Creek
Spanish Ridge
Spanish Flat
Oat Ridge
Kinsey Creek
Fraser Cr.
Moorehead
Telegraph Peak
Telegraph Ridge
Smith
Etter Mtn
Brushy
Saddle Peak
West Fork
Upper East Fork
Bear Trap Ridge
Bear Trap ROAD
Honeydew
MERIDIAN
HUMBOLDT
KING RANGE CREST
Kings Peak
Rattlesnake Ridge
Big Flat
Hadley Pk.
Big Mtn
Shubrick Peak
Hadley Creek
ETTERS CABIN
Wilder
BM 1664
Proposed Boundary Change
Christmas Rock
Punta Gorda
Reynolds Rock
PACIFIC OCEAN
BLM
1
2
7
ZONE BOUNDARIES
PUBLIC ROAD & / OR RIGHT OF WAY
PRIVATE ROAD
B.L.M. ROAD
B.L.M. TRAILS
B.L.M. CAMPGROUND
AIRSTRIP
4 ZONE NUMBER



KING RANGE
National Conservation Area

UKIAH DISTRICT
CALIFORNIA

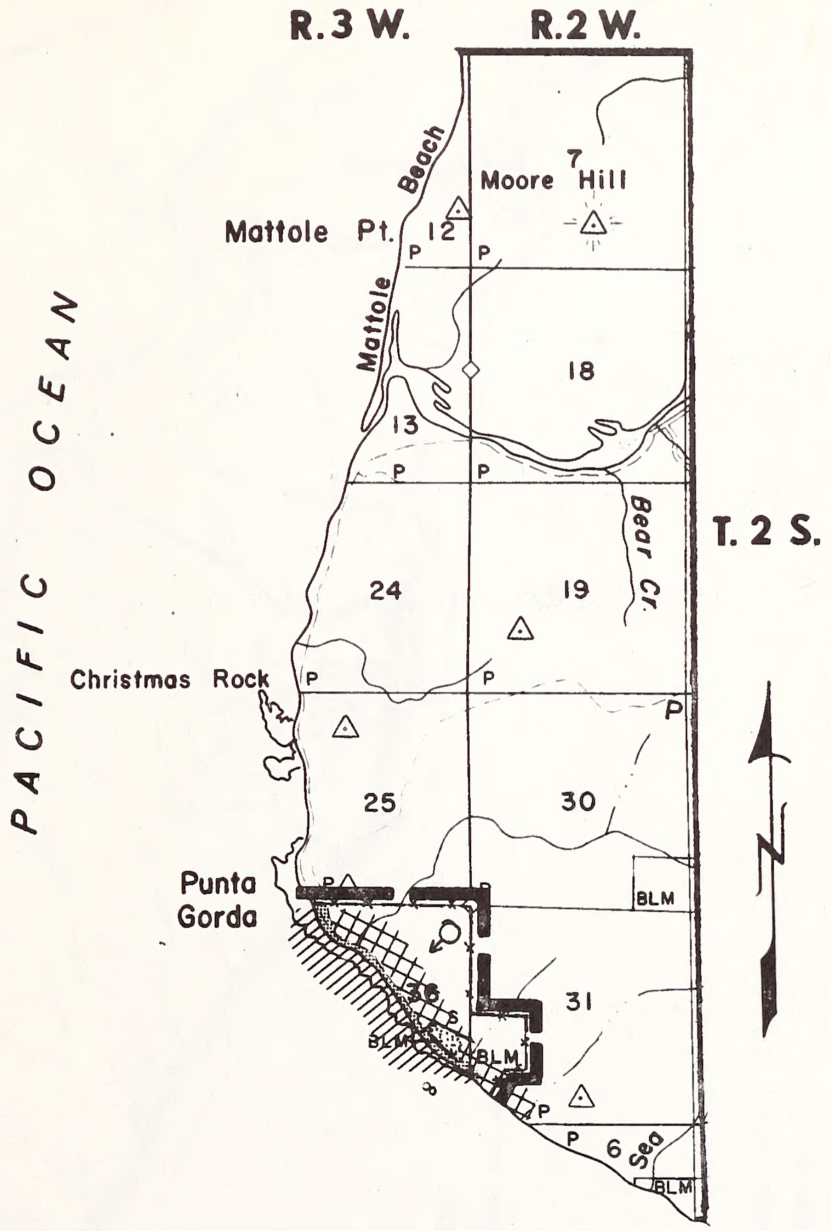
WAY

🟨 NATIONAL RESOURCE LANDS (BLM) at passage of King Range Act (10/70)

🟩 ACQUIRED THRU MARCH 1, 1974

🟦 PLANNED FOR FUTURE ACQUISITION

Punta Gorda

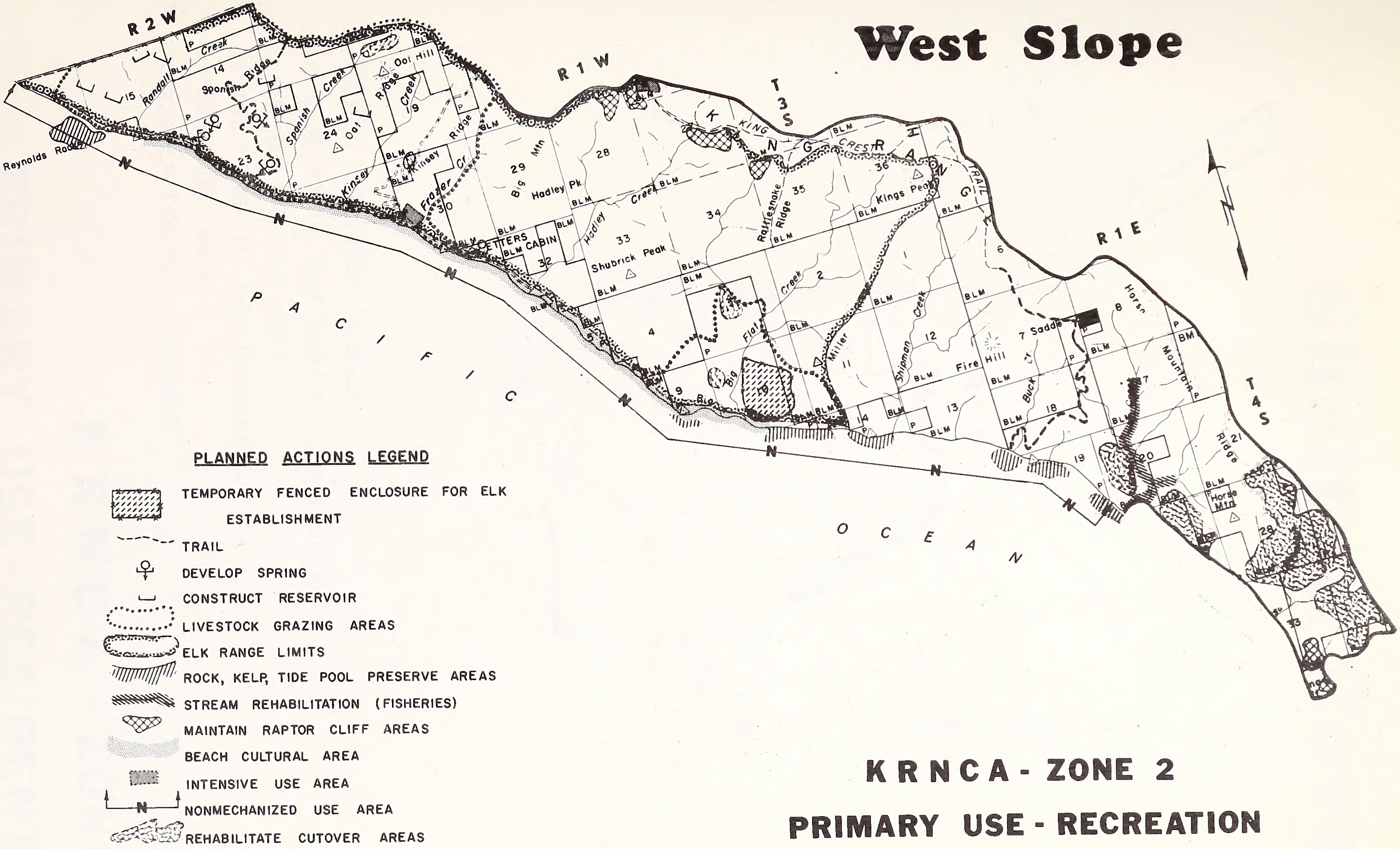


KRNCA - ZONE 1
PRIMARY USE-RECREATION

PLANNED ACTIONS LEGEND

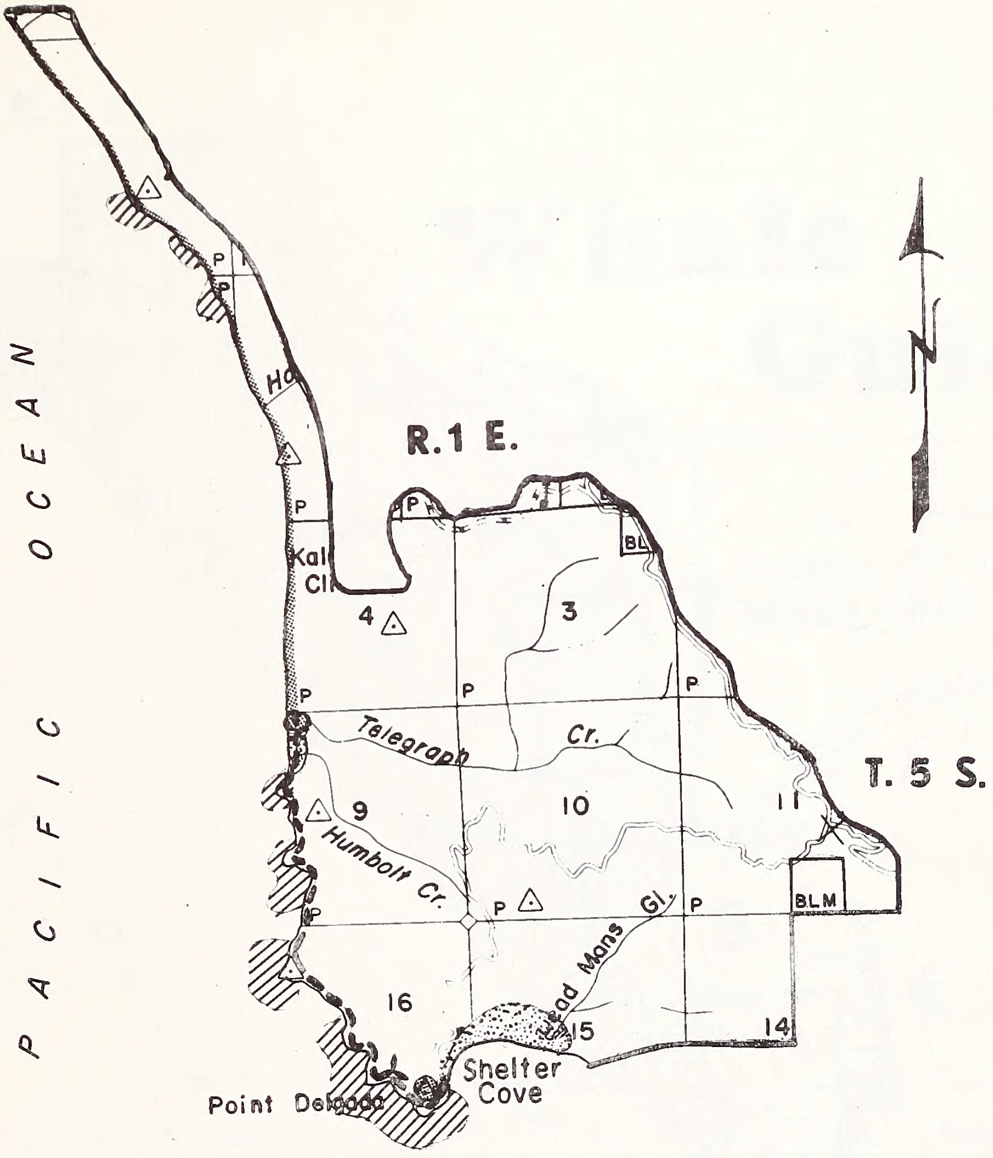
░ INTENSIVE USE AREAS
▦ CULTURAL AREAS
┈ MECHANIZED USE AREA
▨ PRESERVE COASTAL HABITAT
×—×—× FENCE CONSTRUCTION
○→ DEVELOP SPRING

West Slope



KRNCA - ZONE 2
PRIMARY USE - RECREATION

Shelter Cove



PLANNED ACTIONS LEGEND

- - - - - TRAIL RIGHT OF WAY AND/OR CONSTRUCTION

● ESTABLISH PARKING AREA

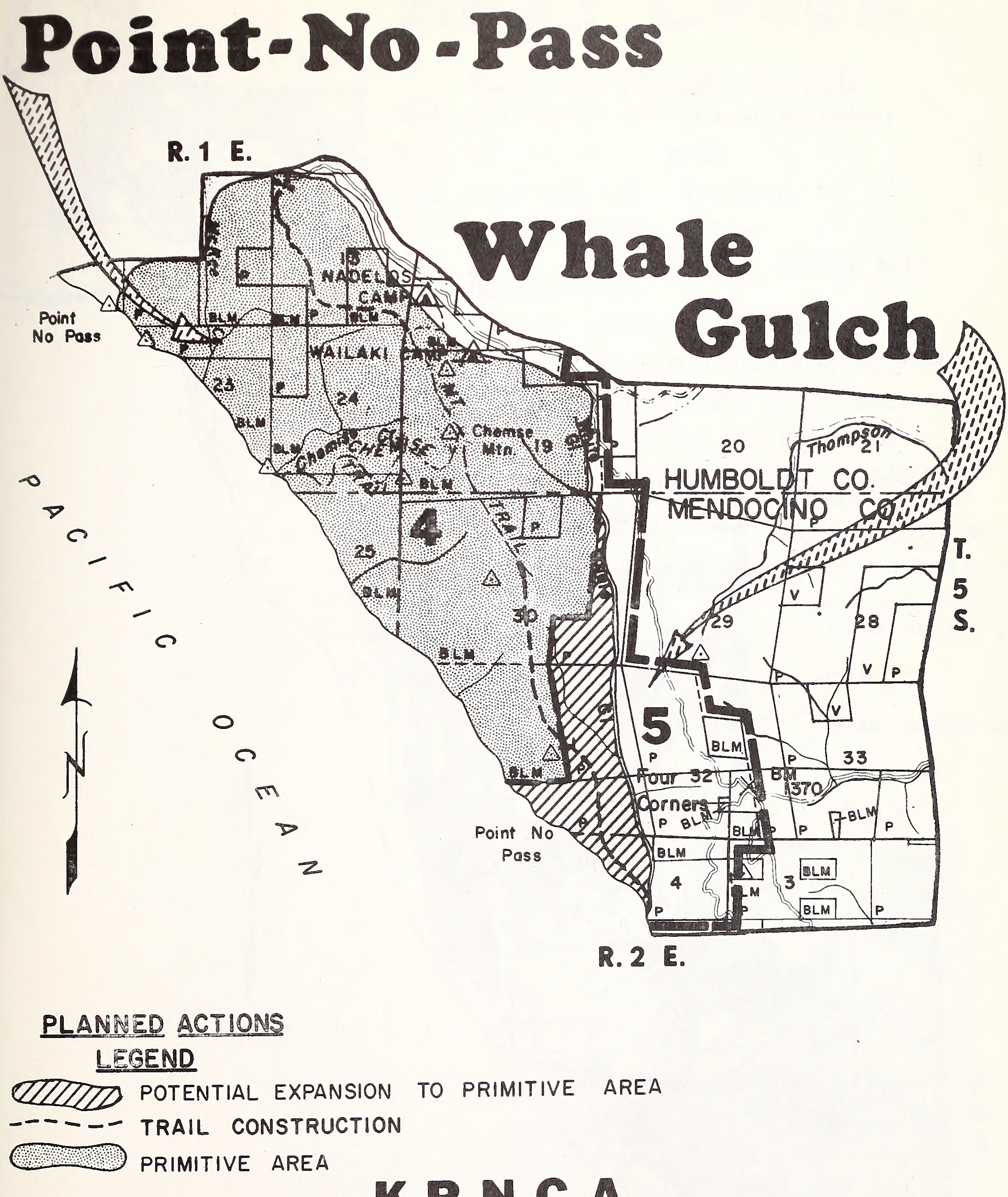
▨ RESTRICT AREA TO NON-MECHANIZED USE

〰 VEHICLE USE AREA

▨ ROCK, KELP, TIDE-POOL PRESERVE

KRNCA - ZONE 3

PRIMARY USE - RESIDENTIAL

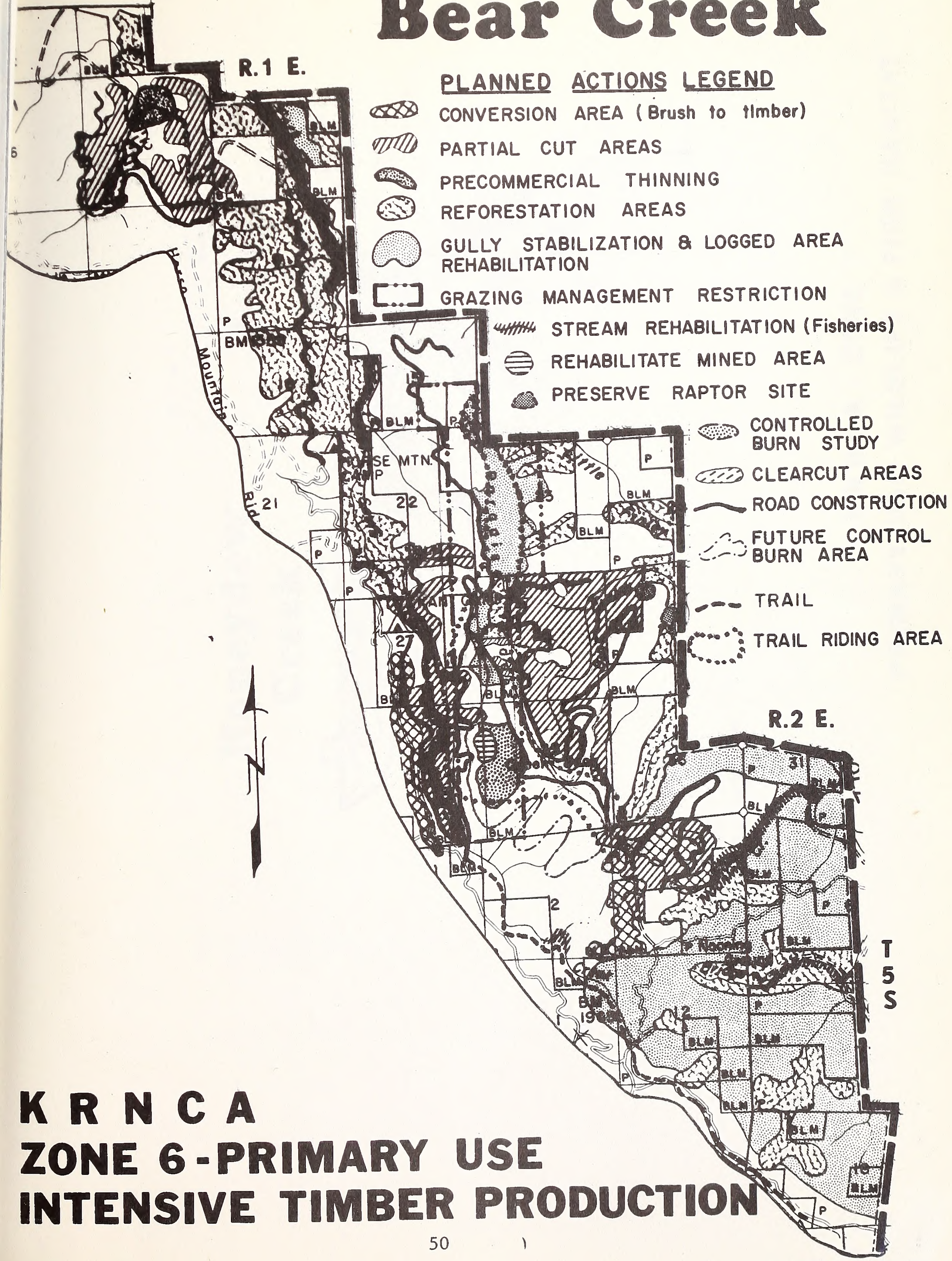


KRNCA

ZONE 4-PRIMARY USE-RECREATION

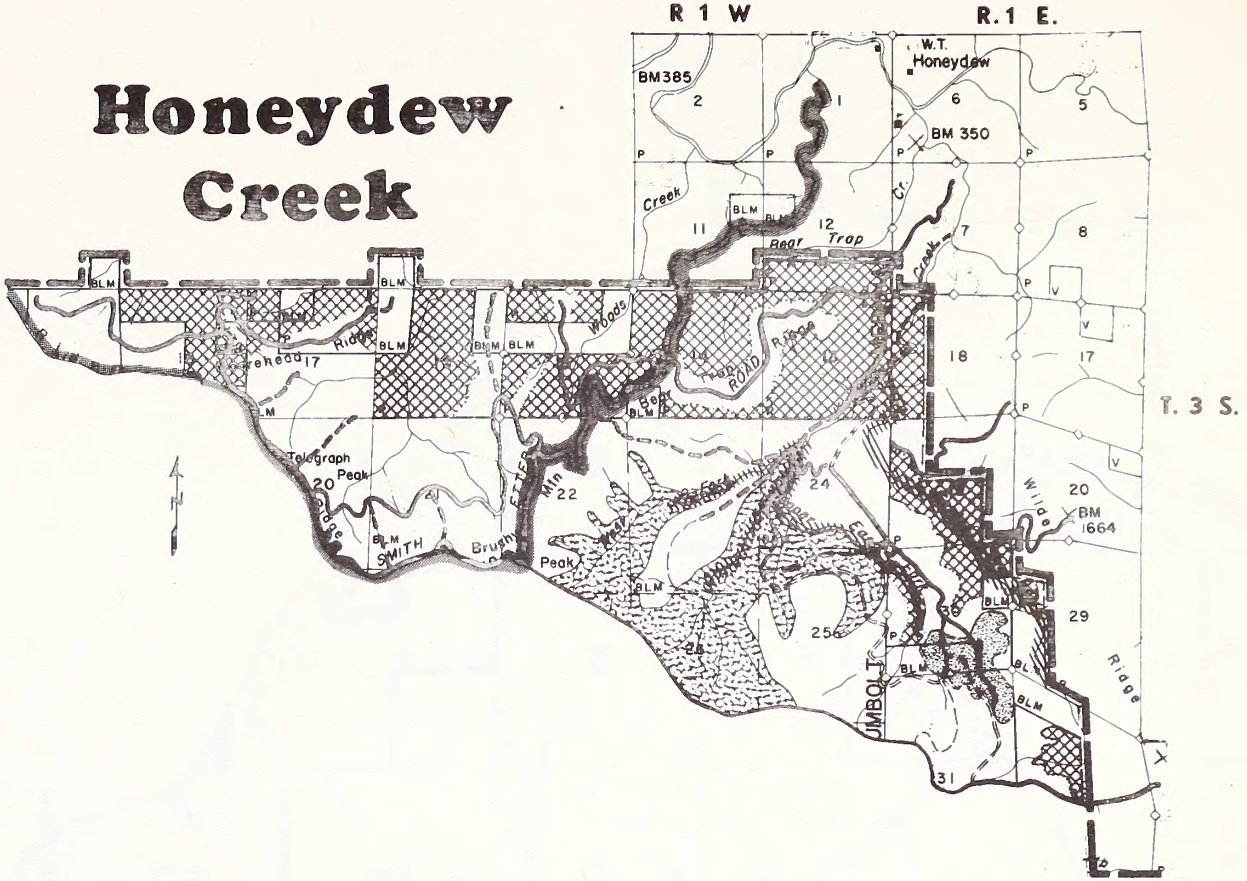
ZONE 5-PRIMARY USE-RESIDENTIAL

Bear Creek



KRNCA
ZONE 6 - PRIMARY USE INTENSIVE TIMBER PRODUCTION

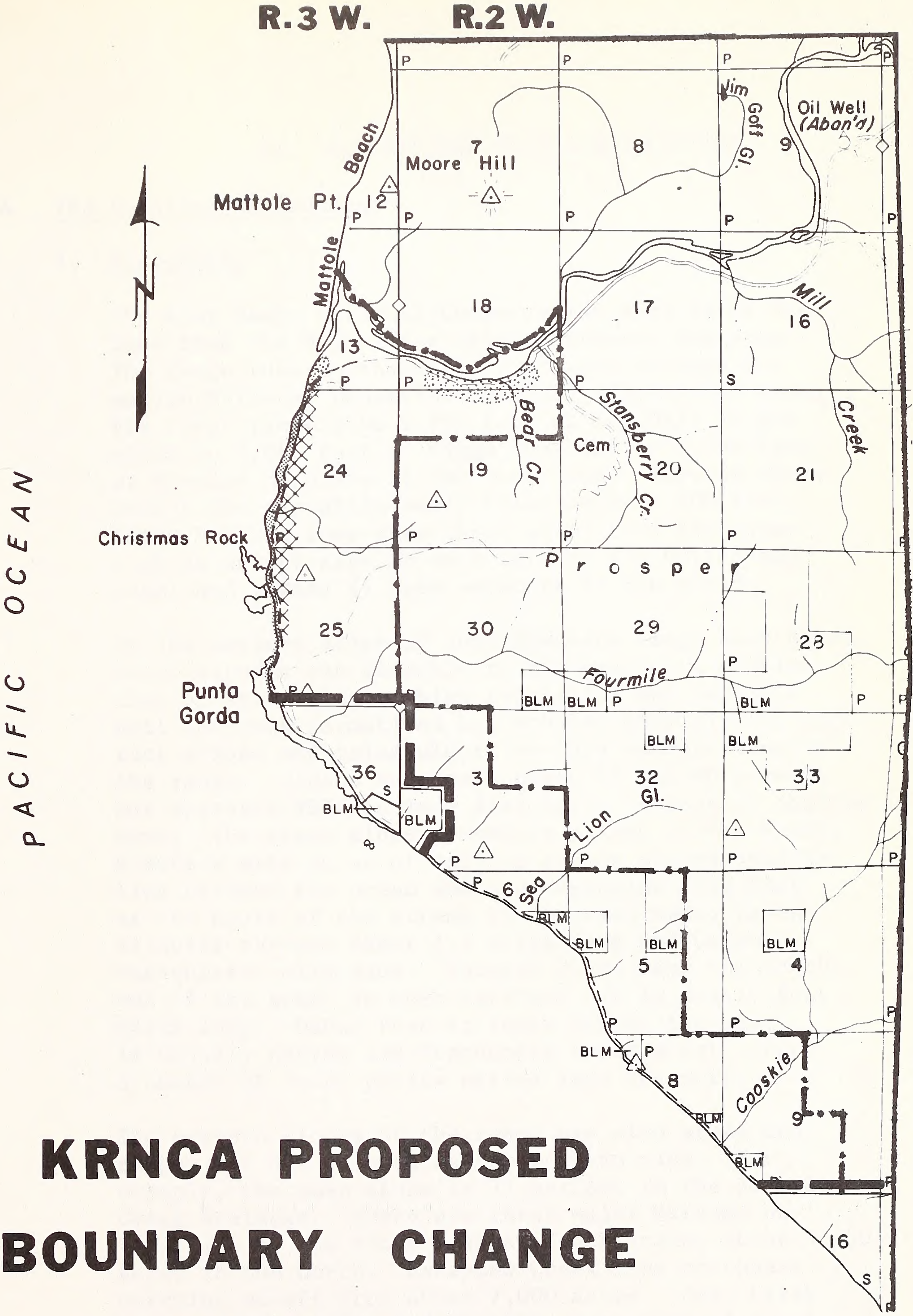
DENVER, CO 8022



PLANNED ACTIONS LEGEND

- RIGHT OF WAY ACQUISITION & ROAD CONSTRUCTION
- TRAIL CONSTRUCTION
- FENCE CONSTRUCTION
- REFORESTATION
- CONVERSION- BRUSH TO TIMBER
- PROTECTION CORRIDOR
- OLD GROWTH FOREST PRESERVATION
- STREAM REHABILITATION (FISHERIES)

KRNCA - ZONE 7
PRIMARY USE - WILDLIFE & FISH HABITAT



KRNCA PROPOSED BOUNDARY CHANGE

PLANNED ACTIONS LEGEND

·—·—	PROPOSED NEW BOUNDARY
▬ ▬	EXISTING BOUNDARY
- - - -	TRAIL - INCLUDING AREAS REQUIRING EASEMENTS
░	INTENSIVE USE AREAS
⨯⨯⨯⨯	CULTURAL USE AREAS
▒	MECHANIZED USE AREA
////////	PRESERVE COASTAL HABITAT

II. DESCRIPTION OF THE ENVIRONMENT

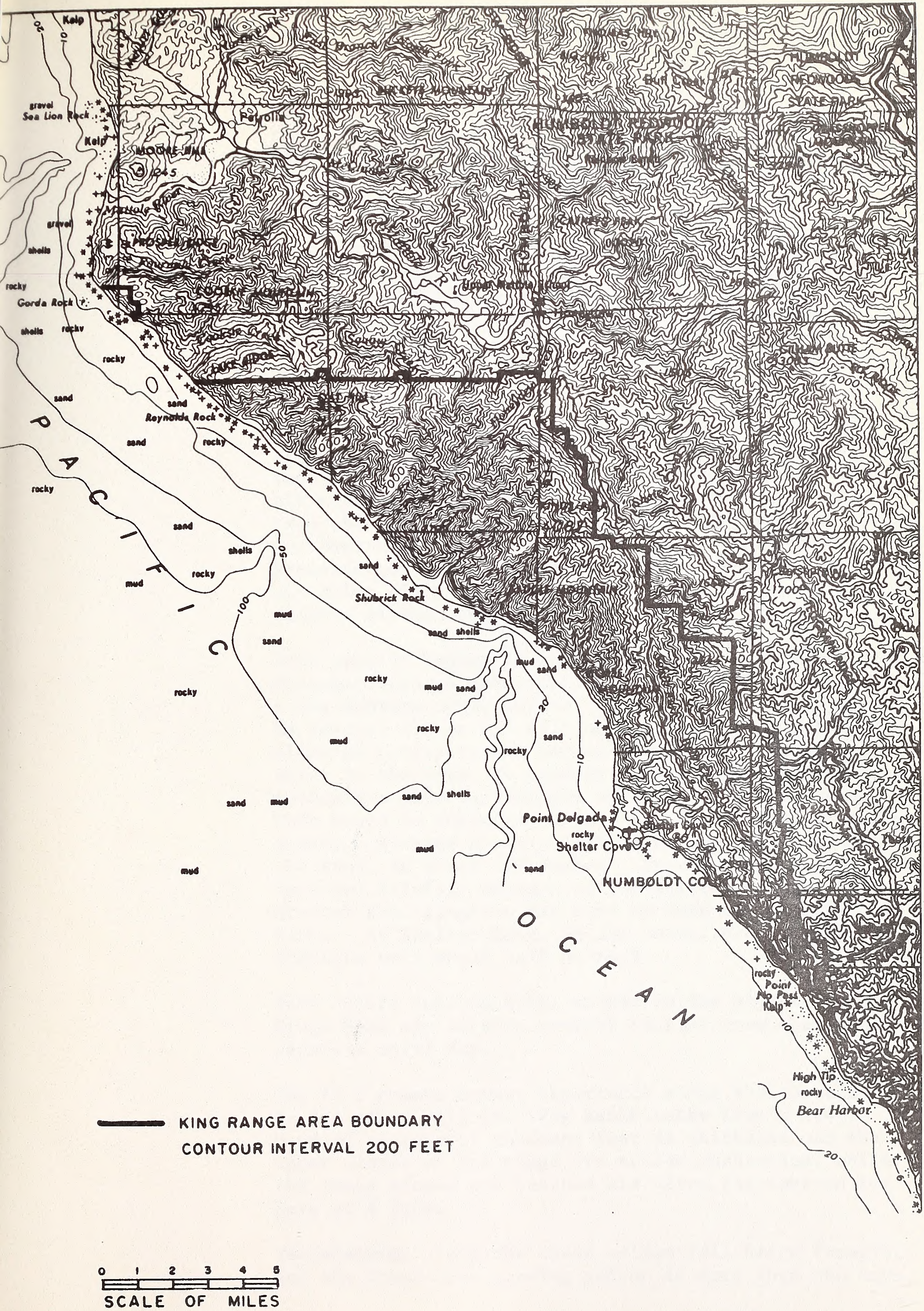
A. The Existing Environment

1. Topography

The King Range National Conservation Area takes its name from the high ridge which dominates the area. The range runs northwest by southeast through the entire National Conservation Area. Elevations along the ridge range from 2,350 feet at Oat Hill in the north to 4,087 feet at Kings Peak and to 2,596 feet at Chemise Mountain at the south end. Between these points the elevation never falls below 1,400 feet. Kings Peak is less than three miles from the ocean. Such an abrupt rise is very rare on the California coast and indeed is rare anywhere in the world.

On the western slope of this dominant range many short, steep streams run directly to the ocean. A combination of steep slopes, high rainfall, and unstable soil and rock formations has created many cliffs, huge rock slides and talus slopes on this seaward face of the range. Slopes average between 50 and 60 percent but approach 90%+ in many drainages. Except at Shelter Cove, the steep slopes commonly extend to the beach. A square mile or so of rolling grassy slopes usually lies between the ocean and the mountains. Big Flat, at the mouth of the stream of the same name, is an alluvial terrace about 1.5 miles long and up to one-quarter mile wide. Spanish Flat, near the north end of the area, is much narrower but is nearly four miles long. Other than at these places the beach is usually narrow and frequently nonexistent where a number of rocky points extend into the surf.

The eastern slopes of the range are also steep and rugged but not so much as the western side. For example, the mean slope is 37 percent in the Honeydew Creek drainage. There are three major streams on this side of the range. Squaw Creek drains about 3,500 acres in the north. Honeydew Creek runs northeast carrying runoff from about 7,000 acres. Bear Creek has two major forks and drains a watershed of about 9,400 acres. The North Fork arises near the southeastern slope of Kings Peak and runs east and south to join the South Fork. The South Fork arises near the southern end of the area and flows north for more



KING RANGE
NATIONAL CONSERVATION AREA

than 10 miles to its junction with the North Fork. Past this junction Bear Creek runs east, out of the King Range Area, to the Mattole River. The King Range streams form only a small portion of the Mattole's 240 square mile watershed.

With the major exception of the South Fork of Bear Creek, the streams on both the east and west slopes branch repeatedly in a dendritic pattern. This produces, in general, narrow, short ridges, and short steep canyons.

2. Climate

The Area has a Mediterranean type climate that is greatly influenced by the ocean. Winters are generally cool and wet and summers are hot and dry. Cold, wet air masses commonly bring heavy rains into the area from the west and northwest, often accompanied by strong southwesterly winds. In summer a persistent high pressure air mass overlies the western Pacific, holding out polar air flows and accounting for the hot dry climate of the Area.

Rain usually begins in late September, is heaviest from December through February, and ends sometime in May. A few showers occur during the dry season and as much as several inches may fall during August and September. Although precipitation has only been recorded at one point in the Area, at Shelter Cove, general observations indicate a wide variability in total rainfall amounts. This would be expected in an area of such complex topography. Average annual rainfall in Honeydew, just outside the Area, is about 110 inches. This is one of the highest recorded rainfall amounts in the United States. Even greater precipitation may fall on part of the King Range. At Shelter Cove, on the coast, precipitation averages only about half as much.

Snow occurs infrequently, except on the higher peaks. Kings Peak may receive several feet of snow that often persists until May.

Fog is a common summer occurrence along the coast and in the river valleys. Fog banks range from a few hundred to several thousand feet in thickness and the upper slopes of the range are seldom enshrouded, while the lower slopes and beaches are often fog-covered for days at a time.

Temperatures along the coast seldom fall below freezing and the frost-free growing season is more than 360 days.

3. Geology

The King Range area is included in the California Coast Range Geologic Province. The province is characterized by two distinct but entirely different core complexes, one mainly consisting of a Jurassic-Cretaceous sedimentary assemblage including some serpentine and minor metamorphic rocks, and the other of granitic intrusives and older metamorphic rocks. This core complex is in part covered by a thick blanket of later Cretaceous and Cenozoic clastic sedimentary rocks. These rocks with their associated structures show a record of intermittent but persistent crustal unrest. Folds, thrust faults, steep reverse faults and strike-slip faults developed during the Tertiary Period, and similar deformation is continuing today associated with the subduction of the East Pacific Plate under the Continental Plate.

At Shelter Cove where a small land area juts out into the ocean, an assemblage of volcanic and sedimentary rocks crops out. The occurrence of this group of rocks is related to an active major fault zone which trends across the Area. The volcanic rocks are mafic in composition and altered. They appear to consist of pillows, tuffs or breccias. Associated with these volcanic rocks are sedimentary rocks consisting of interbedded shales and sandstones. The intimate relationship of these rocks indicates that the volcanic rocks were probably formed by submarine eruptions.

Except for the immediate area at Shelter Cove, the characteristics of the rocks of the King Range are consistent throughout the area. These rocks are not typical of the Franciscan rocks located in the central and southern coast ranges, since the terrain for the most part lacks the greenstone and chert which characterized the typically recognized Franciscan. The area at Shelter Cove more closely resembles the usual assemblage of the typical Franciscan terrain. On the other hand, many of the features observed in these rocks indicate a very close relation to the Franciscan rocks in age, lithology and origin. They are, therefore, considered to be a different facies and are considered to range in age from at least late Jurassic to late Cretaceous.

The Franciscan rocks of the King Range area have been extremely deformed. They have been tightly folded; locally the folding is acute and overturned. Minor structures can be seem in almost every outcrop. Commonly found are shears, minor faults and drag folds.

Many of the shears are nearly parallel to the bedding and form an irregular boundinage or disrupt the continuity of the bedding. Many of these shears appear to be related to the folding of the strata.

Fractures and faults which cut across the bedding are fairly common. Fractures that shatter the more competent beds, as sandstones, are also a common feature of the terrain. Most outcrops exhibit irregularities in bedding, either due to folding or flowage, to such an extent that it is difficult to obtain any meaningful strike and dip.

Among the major structures, steep northwesterly trending faults appear to be the dominating structure. At Shelter Cove several surface fault breaks accompanied the 1906 earthquake. The main break is exposed near the top of Kaluna Cliffs. The fault cuts highly brecciated sandstone and siltstone. The fault dips northeast about 60° and consists of a single well-defined plane that branches upward into two subsidiary and subparallel breaks about 50 feet below the top of the cliff. This fault is known as the Point Delgada fault and is thought to be either the extension of the main San Andreas fault, or a main branch.

There are probably other major faults with similar northwest strike located in the Area. Some may have large vertical components of displacement which would be responsible for recent uplift of this part of the coast ranges.

The faults within the Franciscan are not easily detected because they generally trend with the prevalent structural grain that is due to folding. Presence of major faulting or shear zones is sometimes suggested by the highly brecciated nature of the shales and sandstones as evidenced by the Kaluna Cliffs or the area southwest of North Slide Peak. In these areas there is a prevalence of landslides and extreme amounts of erosion taking place. Usually the surface areas are bare, as vegetation has not been able to establish itself.

The surficial deposits in this area consist of recent stream deposits and moderately thick accumulations of colluvium on the steep slopes. Depending on the degree of erosional activity occurring in the watershed, some channels may be either full of alluvial debris in transit or in a stabilized condition with only small quantities of stream wash material.

The colluvial deposits occurring on the slopes consist of unstratified or poorly stratified, unconsolidated deposits composed of fresh and weathered rock fragments, organic material, sediments or irregular mixtures of these materials. Generally, they accumulate by down-slope movement by action of gravity and/or assisted by running water. Some of the various deposits that have been lumped together under the heading of colluvium include old landslide deposits, old channel deposits that occur as isolated accumulations on side slopes above the present stream channels and thicker and more extensive deposits that have accumulated by the action of "soil creep".

4. Minerals

Natural seepages of oil and gas along the Mattole River were noted as early as 1860. The nearest and oldest commercial oil well is in the Petrolia District, 11 miles north of the KRNCA; 50 wells were drilled in 1894, 1899, 1900, 1907, 1921, 1935, 1947, and 1953, with peak production of 140 barrels in 1954 from a stratigraphic trap 1,600 feet deep. The field is no longer productive. Due to complex folding and faulting in the King Range, the potential for oil and gas is less than that of the Petrolia District.

Lignite has been reported in several small beds 6" to 8" thick, dipping north, just north of the King Range, in Section 12, T. 3S., R. 1W., H.M., but there has been no production and the occurrence is questionable. No lignite exposures were observed in this area or within the King Range.

Copper has been reported on private land in Section 12, T. 2S., R. 1E., H.M., 6 miles north of the boundary, but there was no production.

The Mattole River produces sand and gravel, but no workable deposits were observed within the King Range. Since the Mattole River drains an area of sandstone and shale, the gravels make a poor quality product for road base and other construction.

The only known mineral production in the King Range was from the Queen Peak mine, on the brushy eastern slope of Queen Peak at an elevation of about 2,000 feet (NW¼ Section 35 and NE¼ Section 34, T. 4S., R. 1E., H.M.)

Although the deposit was known for a long time, the first carload of manganese ore from the Queen Peak mine was shipped to the GSA stockpile at Wenden, Arizona in September 1958. Within the next year, a total of 1,115 tons of hand-sorted, high grade ore was trucked 45 miles to the nearest railhead. The ore ran from 41% to 52% manganese, about 6% iron, and less than 15% silica. When government stockpiling ended in 1959, all California manganese mines closed. Manganese has been reported in several other outcrops between Queen Peak and Shelter Cove.

Lands on the Outer Continental Shelf are not included within the KRNCA. There are indications that these lands have an undetermined potential for oil and gas, phosphorite, manganese nodules, and, near river mouths, potential placer gold.

5. Water

a. Surface Water

(1) Water yield and use vary greatly. Yield is estimated at 82% of total precipitation. Average runoff in the Mattole River drainage is 970,100 acre feet. An estimated 55,300 feet of runoff drains from Bear Creek annually, while Honeydew Creek's runoff is estimated to be about 52,300 acre feet. Use is almost nonexistent within the Area. None of the coastal streams are used at all except by wildlife, livestock and an occasional human. Outside the Area, Honeydew, Bear and Squaw Creeks contribute runoff to the Mattole River, but the river is subject to almost no direct consumptive use. Only about 350 acres of agricultural land are irrigated by direct diversion from the river. There are no impoundments, either within the King Range Area or downstream. Most domestic and agricultural water is obtained from springs on private land, and there are a few wells, mainly along the Mattole River.

(2) Sediment. Quantities of sediment vary greatly. The steep, unstable topography causes many slumps and slides. Stream cutting of the toe of these features is the main natural contributor of sediment. Bank caving is a minor producer of sediment. The heavy

vegetative cover prevents much sheet type erosion. However, where vegetation is removed erosion may become a very serious problem. There are occasional massive land movements, such as may be caused by earthquakes, which move great quantities of earth and rock down the watershed in a short period. It is estimated that approximately 80% of the sediment load is a product of natural erosion.

Man-caused erosion results mainly from three kinds of actions. Logging can disturb the ground badly and can contribute heavy sediment loads to streams. Most of the private land in the unit has been logged, but almost none of the public lands. The logging practices employed on these private lands have definitely contributed to sediment loading. Road building is probably the main cause of erosion and sedimentation. There is some evidence of this on the grasslands along the northern boundary of the unit. Finally, conversion of timberland to grassland removes the deep rooted plants and thus lowers soil stability. This has been done on portions of a ranch in the northeastern part of the Area.

(3) Pollutants. Pollutants other than suspended and free sediment have not been found to be a problem in the King Range streams. There are, however, several streams flowing into the ocean south of Big Flat that are high in calcium that is caused by the rock formations where the streams originate.

b. Ground Water

Virtually no data on ground water is available. Known springs are shown on the hydrology overlay in the unit resource analysis. There are no known wells within the boundaries of the planning unit. One well site investigation at Tolkan Camp has been made by USGS. Their conclusion was that the chance of finding ground water in that area was poor. It can be inferred from the folded and faulted rock strata that there are probably a number of small ground water basins in the Area. There is no way at this time to determine their exact location or extent.

c. State Water Quality Requirements

The California Regional Water Quality Control Board has designated the nearshore waters of the King Range coastal area as an Area of Special Biological Significance which puts very stringent requirements on any effluent in natural water. Once an area has an ASBS designation no effluent is allowed which will change background quality or temperature above naturally occurring conditions.

Activities in the KRNCA are governed by the water quality objectives and discharge prohibitions issued by the North Coast Regional Water Quality Control Board. These objectives and discharge prohibitions are contained in the North Coastal Basin 1-B (interim) Water Quality Control Plan, published in June 1971.

Among the objectives having direct relevance to the Management Program are:

(1) Turbidity shall not be increased more than 20 percent above naturally occurring background levels.

(2) There shall be no bottom deposits other than of natural causes in the waters of the North Coast Region.

(3) There shall be no visible evidence of any floatable material or oil and grease other than that resulting from natural causes.

(4) No substance which promotes aquatic growths in the receiving waters, to the extent such growths cause nuisance or damage any benefitcial use, shall be discharged.

6. Soils

a. Erosion

Natural erosion is evident in the King Range, especially near mountain peaks and on the very steep western slopes. Earthquakes, as recently as 1960, caused major earth disturbances and apparently exposed many areas to earthslides and slips.

Accelerated erosion is caused by man's disturbance of the natural landscape. It results from exposure of the soil surface to the effects of running water and of wind, through burning, excessive grazing,

forest cutting and tillage, any of which destroy or weaken the vegetation. Exposed soil may erode very rapidly if not managed to restore vegetation or to compensate for its absence.

Some areas of the King Range contain examples of accelerated erosion. Road construction has in some places changed the earth slopes beyond their angle of repose and has caused earth slippages and landslides. Road construction alone has exposed many acres of soil to accelerated erosion both above and below the immediate road area. Past burning and some timber cutting practices have destroyed vegetative cover and have caused active landslides, especially in the Honeydew Creek area.

b. Soil Series Descriptions

Brief soil series descriptions are given here.

(1) Conifer Soils

Hugo: These soils are derived from sandstone and some conglomerate shale and schist parent material to form medium textured sandy clay loam to heavy loam soils. They are well drained and moderately permeable and range in depth from 2½ to 5 feet. Erodibility under natural vegetative cover is low; however, in disturbed areas, where vegetation has been removed, erodibility may be very high on steep slopes. The natural vegetation associated with Hugo soils is a mixed conifer-hardwood forest of Douglas fir, tanoak, and madrone with an understory of shrubs. Due to their high acidity, attempts to convert these soils to forage production have been unsuccessful.

Road construction conditions of the Hugo soils are good because of their favorable physical properties and their relatively high bearing surface capacity.

Josephine: These soils are derived from sandstone and shales that may be metamorphosed in and from schist parent material and represent the next developmental stage above. They occur on moderate to very steep slopes under mixed coniferous forest. Depth to rock ranges from 20 to 60 inches, 36 to 48 inches being average. Erodibility under natural vegetative cover is low; however, in disturbed areas where vegetation has been removed, erodibility may

be very high. Vegetation varies - Douglas fir, ponderosa pine, sugar pine, incense cedar, black oak, Oregon white oak, madrone, big leaf maple, manzanita, poison oak, mountain misery, and perennial grasses.

Road construction conditions of the Josephine soils are not as good as the Hugo, because of higher clay content in subsoils.

Usal: The Usal soils are developed from Franciscan sandstone shale parent material. Underlying parent rock is hard, partially weathered, shattered sandstone at the depth of about 38". They occur on steep to very steep mountainous slopes. Erodibility under natural vegetative cover is low; however, in disturbed areas where vegetation has been removed, erodibility may be very high. Vegetation is typically coniferous forest with Douglas fir, some grand fir and western hemlock. Hardwood species are tanoak, madrone and California laurel. Sword fern is the principal understory species. Road construction conditons are about the same as the Josephine soils.

(2) Woodland Grass Soils

Kneeland: These soils are derived from yellowish brown sandstone (graywacke). They are moderately deep (35") to sedimentary rocks. Kneeland soils occur on moderately steep to steep, well dissected mountains, with rounded ridges and V-shaped drainages. Where vegetation has been removed, erodibility is moderate to high. Vegetation consists of grass, with bracken fern common. Occasional scattered hardwoods are Oregon white oak and California laurel.

Road construction conditions on moderate slopes are fair to good.

(3) Chaparral Soils

Los Gatos: Los Gatos soils are derived from very pale brown sandstone parent material. They rest on sandstone bedrock at about 36". These soils appear on steep to very steep slopes. Erosion hazard is moderate to high with the removal of vegetation. Vegetation is chaparral with some areas of hardwoods and grass.

Road construction conditions are fair to good.

Maymen: The Maymen soils are derived from light yellowish-brown and pale brown, very hard fractured sandstone. Vegetation is usually open stands of chaparral consisting of chamise, manzanita, ceanothus, scrub or dwarf oak, and scattered small trees in protected areas.

Road construction conditions are good; bearing rocks are hard and abrasive.

Cahto: These soils are developed from deeply weathered, very pale brown sandstone and shale parent material. Depth of rock ranges from 18"-36". Vegetation consists of tall dense shrubs with stunted hardwoods, coast whitethorn eastwood manzanita, California coffeeberry, California yerba santa, California laurel, tanoak, madrone and sparse understory of poison oak, bracken fern and other herbaceous plants.

Road construction conditions are good.

(4) Unclassified and Miscellaneous Land Types

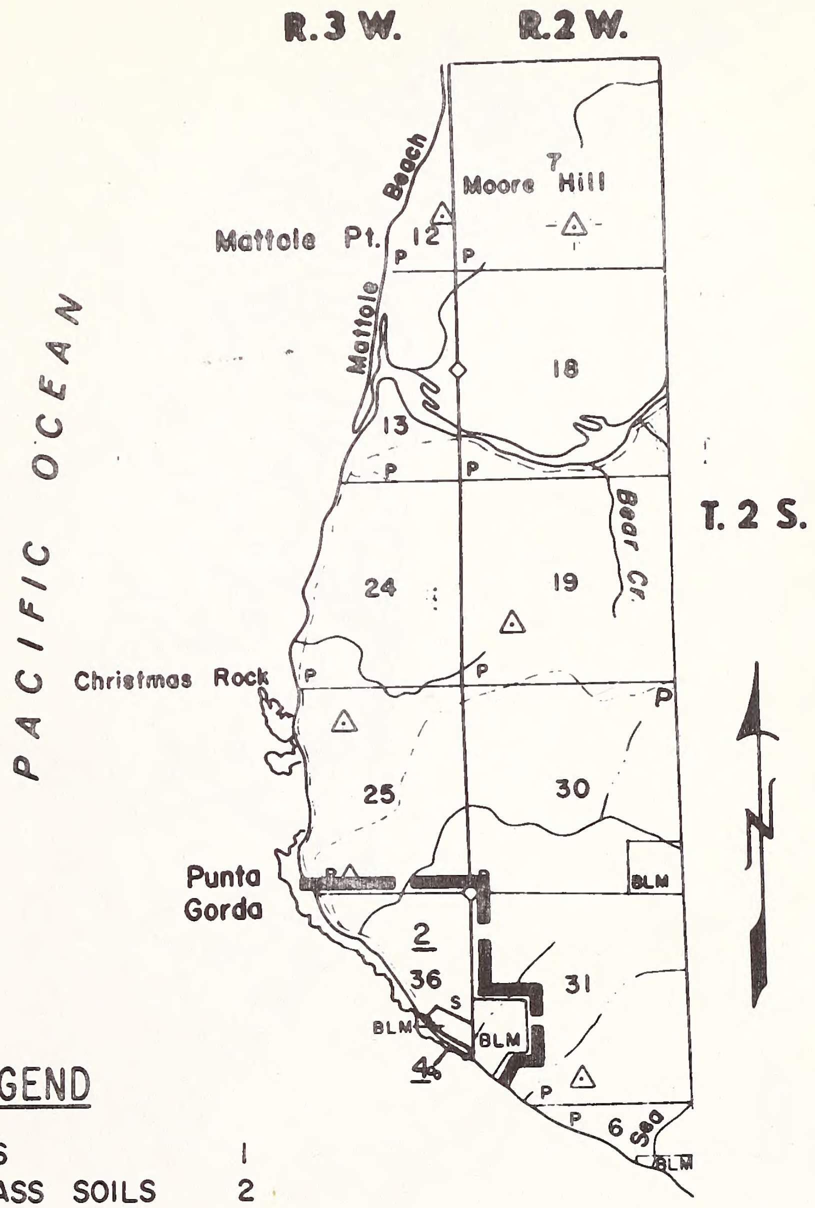
(a) 100 and 200, unclassified: secondary bottomland soils; or cultivated cropland.

(b) 700 miscellaneous land types. These land types have little or no soils, or soils of the type that cannot be feasibly classified. They are generally unsuited for commercial production of timber or range forage and are described as follows:

- Colluvial land: These are areas of unconsolidated recent colluvium of heterogeneous deposits of soil material, rock fragments or mixtures of the two. They accumulate by gravity on the base of slopes. Such areas are very unstable, steep, gravelly, and subject to frequent surface movement. Woodlands are most commonly associated with these areas.

- Riverwash, beaches, and dune land: This group consists of barren, or nearly barren, course-textured material subject to frequent shifting. Riverwash materials appear mostly in the form of sand, gravel, or cobblestone in the stream channels away from the coast, along the coast on beaches and active sand dunes.

Punta Gorda

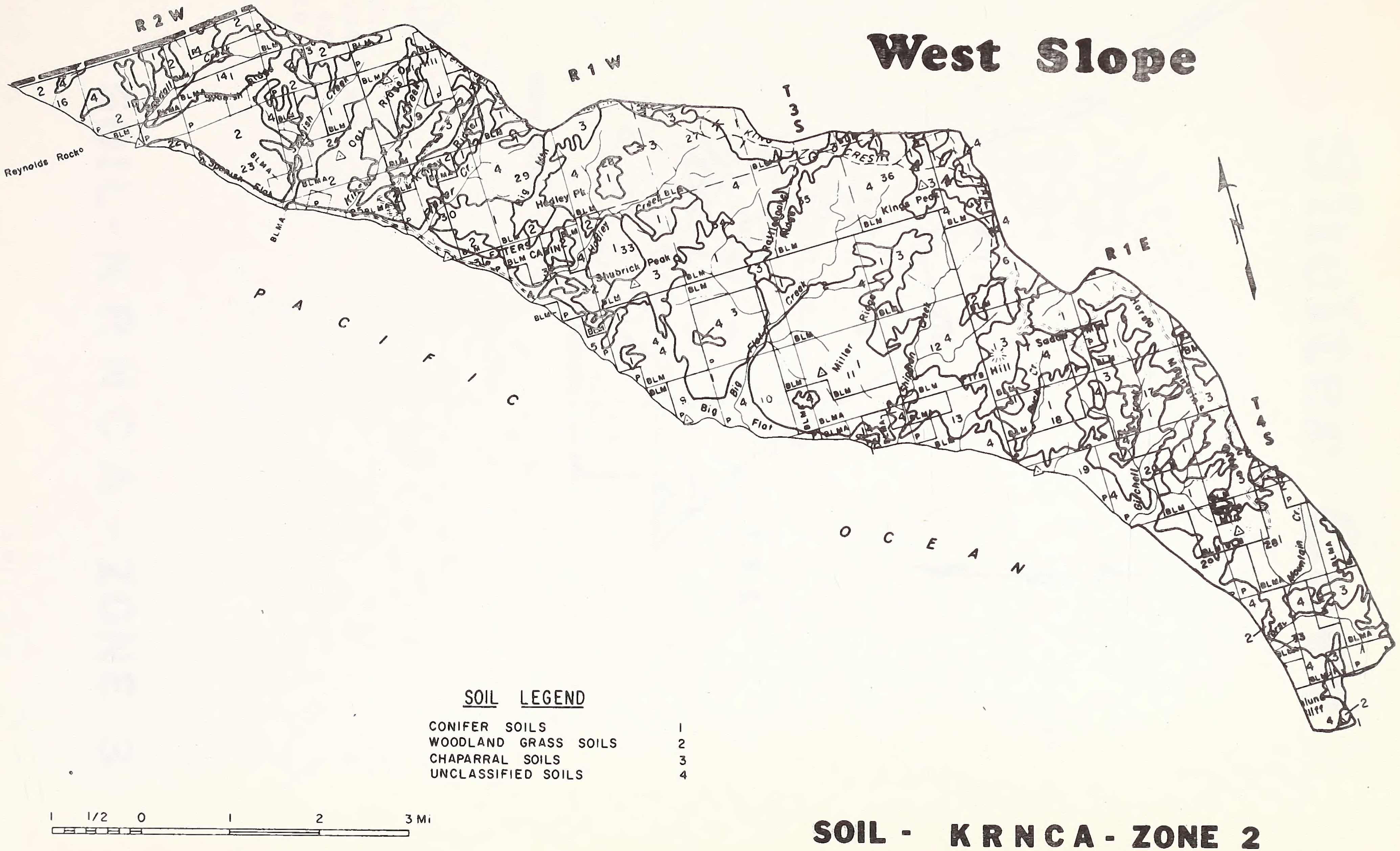


SOIL LEGEND

CONIFER SOILS	1
WOODLAND GRASS SOILS	2
CHAPARRAL SOILS	3
UNCLASSIFIED SOILS	4

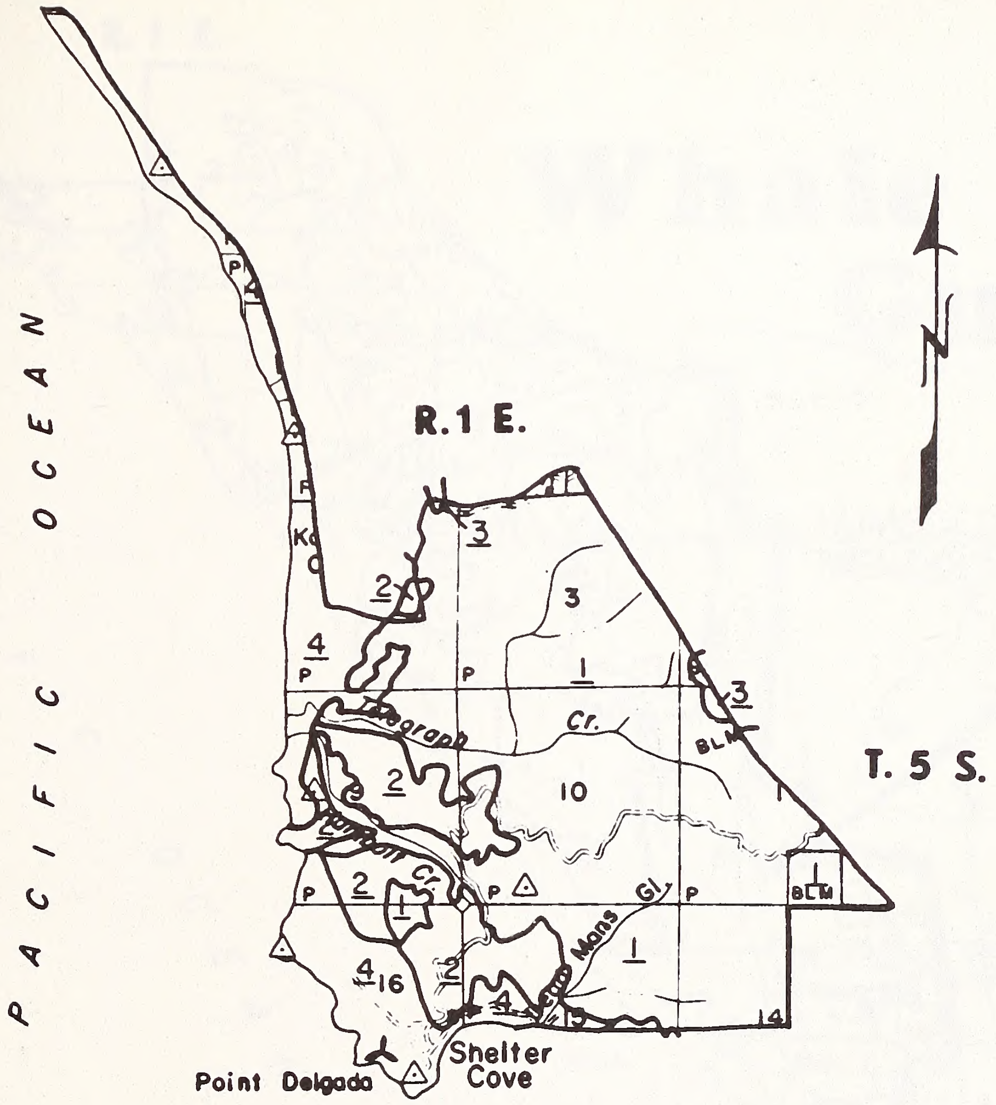
SOIL KRNCA - ZONE 1

West Slope



SOIL - KRNCA - ZONE 2

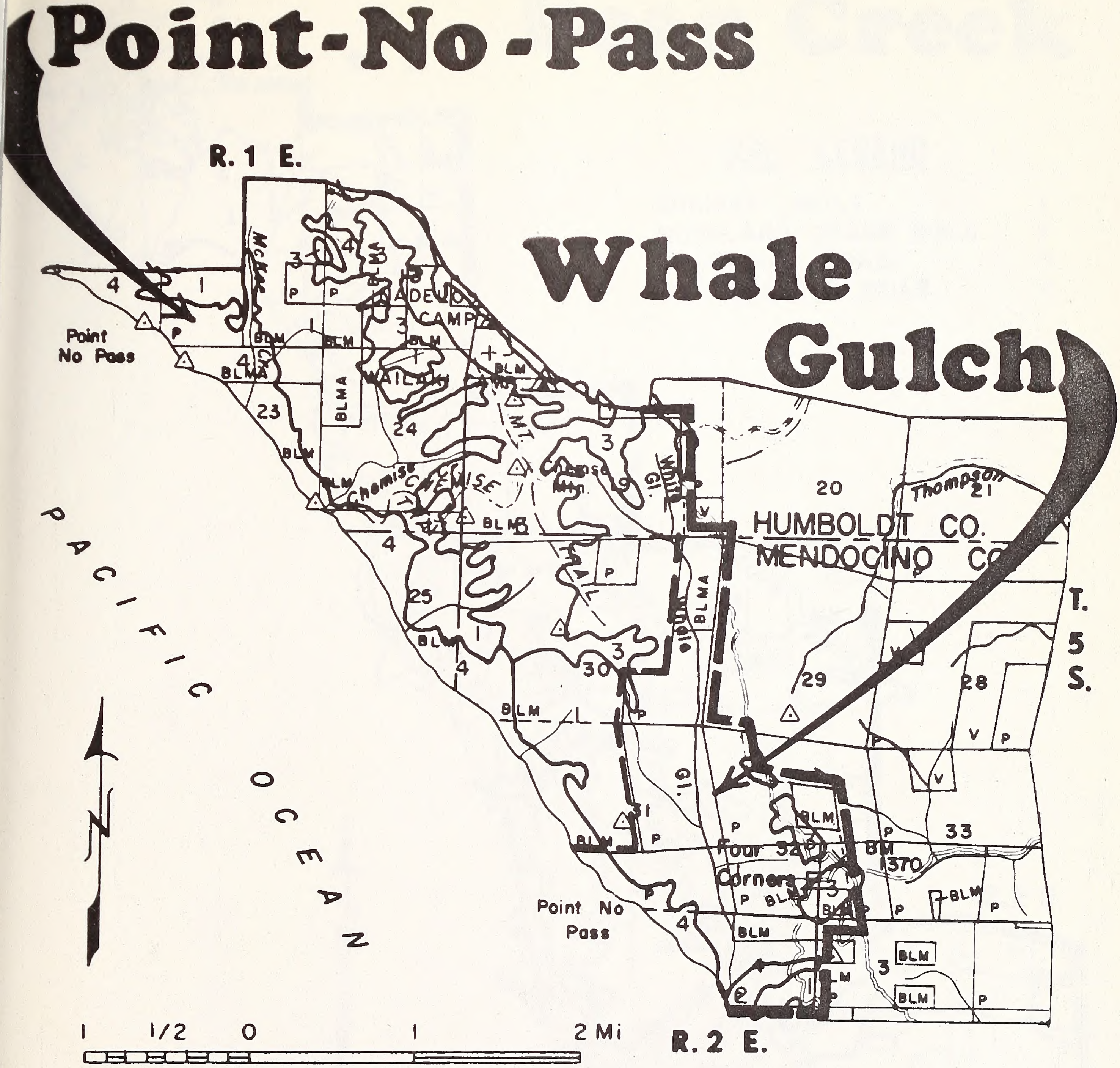
Shelter Cove



SOIL LEGEND

CONIFER SOILS	1
WOODLAND GRASS SOILS	2
CHAPARRAL SOILS	3
UNCLASSIFIED SOILS	4

SOIL - KRNCA - ZONE 3



KRNCA

ZONE 4 & ZONE 5

·SOIL·

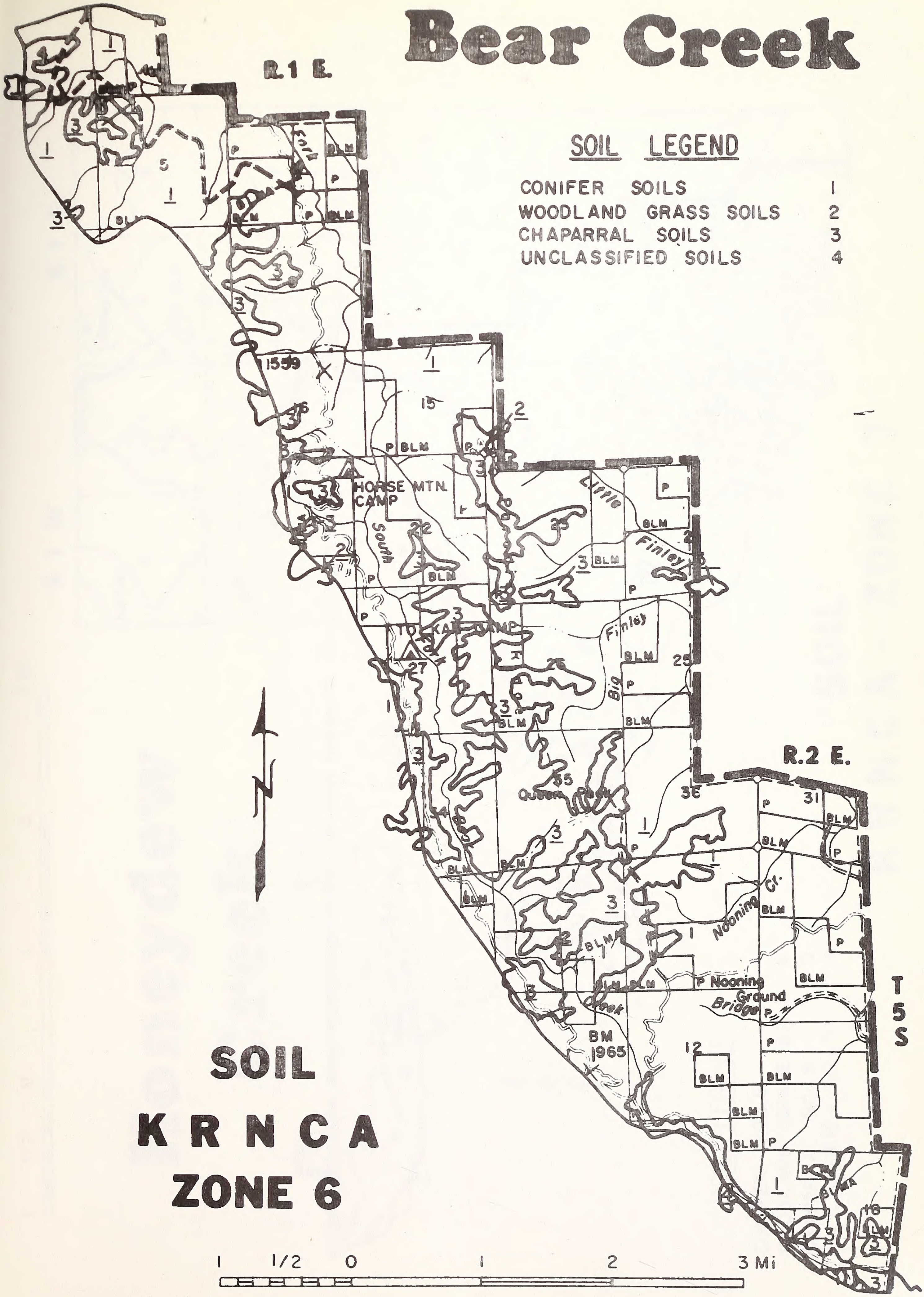
SOIL LEGEND

CONIFER SOILS	1
WOODLAND GRASS SOILS	2
CHAPARRAL SOILS	3
UNCLASSIFIED SOILS	4

Bear Creek

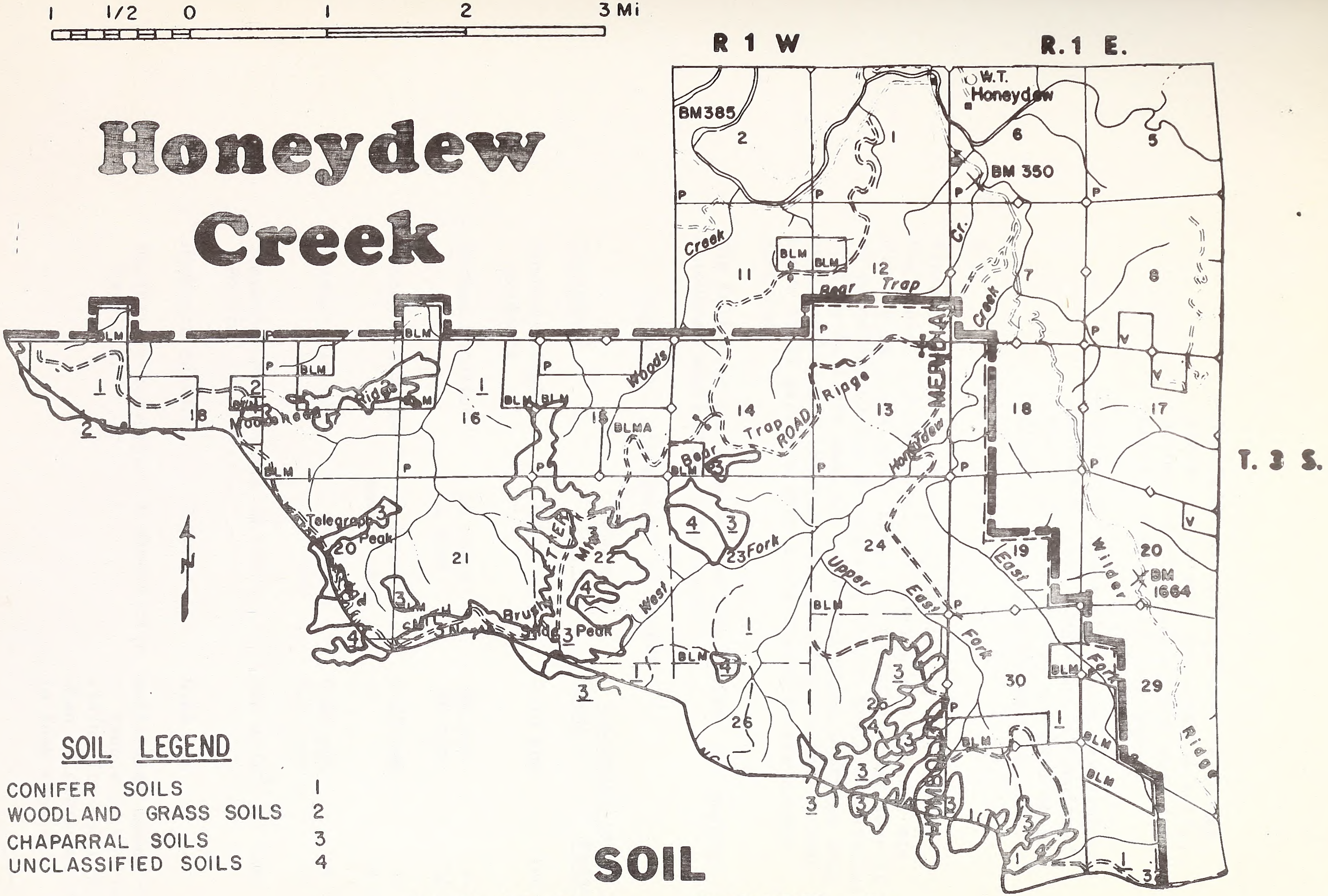
SOIL LEGEND

CONIFER SOILS	1
WOODLAND GRASS SOILS	2
CHAPARRAL SOILS	3
UNCLASSIFIED SOILS	4



SOIL
K R N C A
ZONE 6

Honeydew Creek



SOIL LEGEND

CONIFER SOILS	1
WOODLAND GRASS SOILS	2
CHAPARRAL SOILS	3
UNCLASSIFIED SOILS	4

SOIL
KRNCA - ZONE 7

- Rockland and rock outcrop: Although there may be some very shallow soils, exposed bedrock and surface rock fragments cover most of this area.
- Talus (Rubbleland): These are sloping masses of rock fragments, accumulated mostly by rock fall at the base of a cliff or other weathering rock mass.

7. Air

Since the area is relatively remote, is adjacent to the ocean, and has little industrial development, air quality is excellent. There are no major point sources of emissions within or adjacent to the KRNCA. Vehicular traffic is light and, while no monitoring stations have been established, because of prevailing weather conditions it is probable that state standards are seldom exceeded.

The following table summarizes the ambient air quality standards applicable in California.

TABLE IV - AIR QUALITY STANDARDS

Pollutant	Averaging Time	Concentration State	Federal
Photochemical oxidants	1 hour	0.10 ppm	160 ug
Carbon Monoxide	12 hours	10 ppm	--
	1 hour	40 ppm	35 ppm
Nitrogen Dioxide	1 hour	0.25 ppm	--
	annual avg.	--	0.05 ppm
Sulphur Dioxide	24 hours	0.04 ppm	0.14 ppm
	1 hour	0.5 ppm	--
Suspended Particulate Matter	24 hours	100 ug/m^3	260 ug/m^3
Hydrogen Sulfide	1 hour	0.03 ppm	--
Visibility Reducing Particles	1 observation	Sufficient amount--to reduce prevailing visibility to 10 miles when relative humidity is less than 70%.	

8. Vegetation

The KRNCA lies within the Pacific Coniferous Forest Subregion of the Coniferous Forest Biome. Munz classifies this area as falling within the Oregonian Biotic Province. In the King Range area the subregion is represented by three plant communities: Douglas Fir Forest, Northern Oak Woodland, and Coastal Prairie.

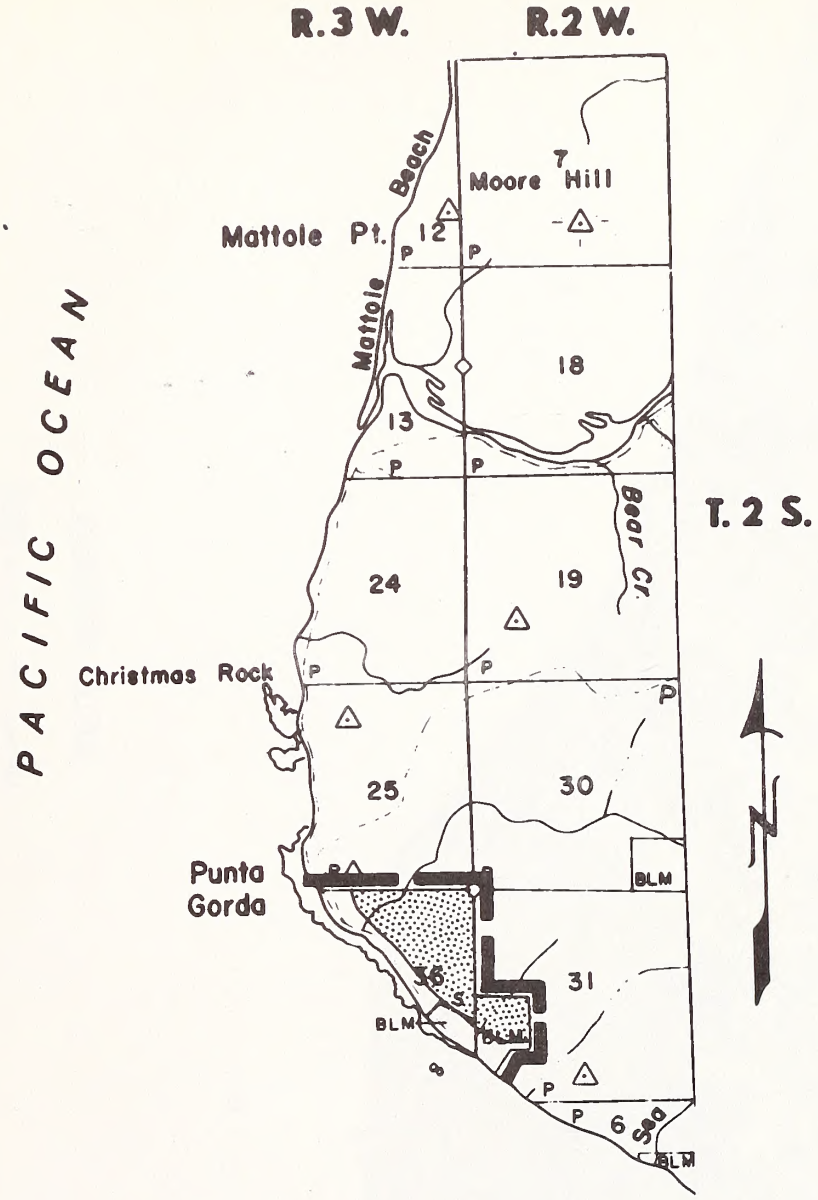
The Coastal Prairie community occupies a narrow discontinuous strip along the ocean and several islands on the ridgetops. The prairie was originally composed of bunch grasses and flowering herbs, but the perennials have now been partially superseded by weedy annual grasses. The Coastal Prairie Community comprises 4300 acres of the KRNCA. This community is closely correlated with soil type.

The Douglas Fir Forest Community is by far the largest community in the KRNCA, covering approximately 38,000 acres. Coniferous species dominate the overstory in the climax type. Douglas fir is by far the dominant coniferous species, but minor amounts of other species such as sugar pine are present. Madrone and tanoak are predominant understory species and in seral stages may dominate the overstory. Other understory species in this community include scrub oak, whitethorn, other chaparral species and huckleberry.

Chaparral stands include a wide variety of species and occupy shallower soils, often forming climax communities along the ridgetops. However, since the dominant species in the KRNCA are primarily those of the Northern Oak Woodland community, these areas have been classified within the community. An estimated 10,000 acres fall within the Northern Oak Woodland community.

At least 25,000 acres of the KRNCA have a potential for intensive timber management, including harvest cutting, vegetative conversion, reforestation, and fertilization.

Punta Gorda



VEGETATION - KRNCA - ZONE 1

VEGETATION TYPES

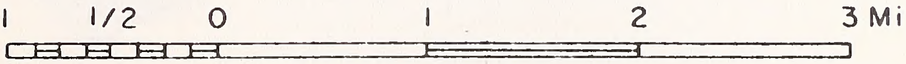
▨ DOUGLAS FIR - CONIFER

☐ BRUSH - MANZANITA, CHAMISE

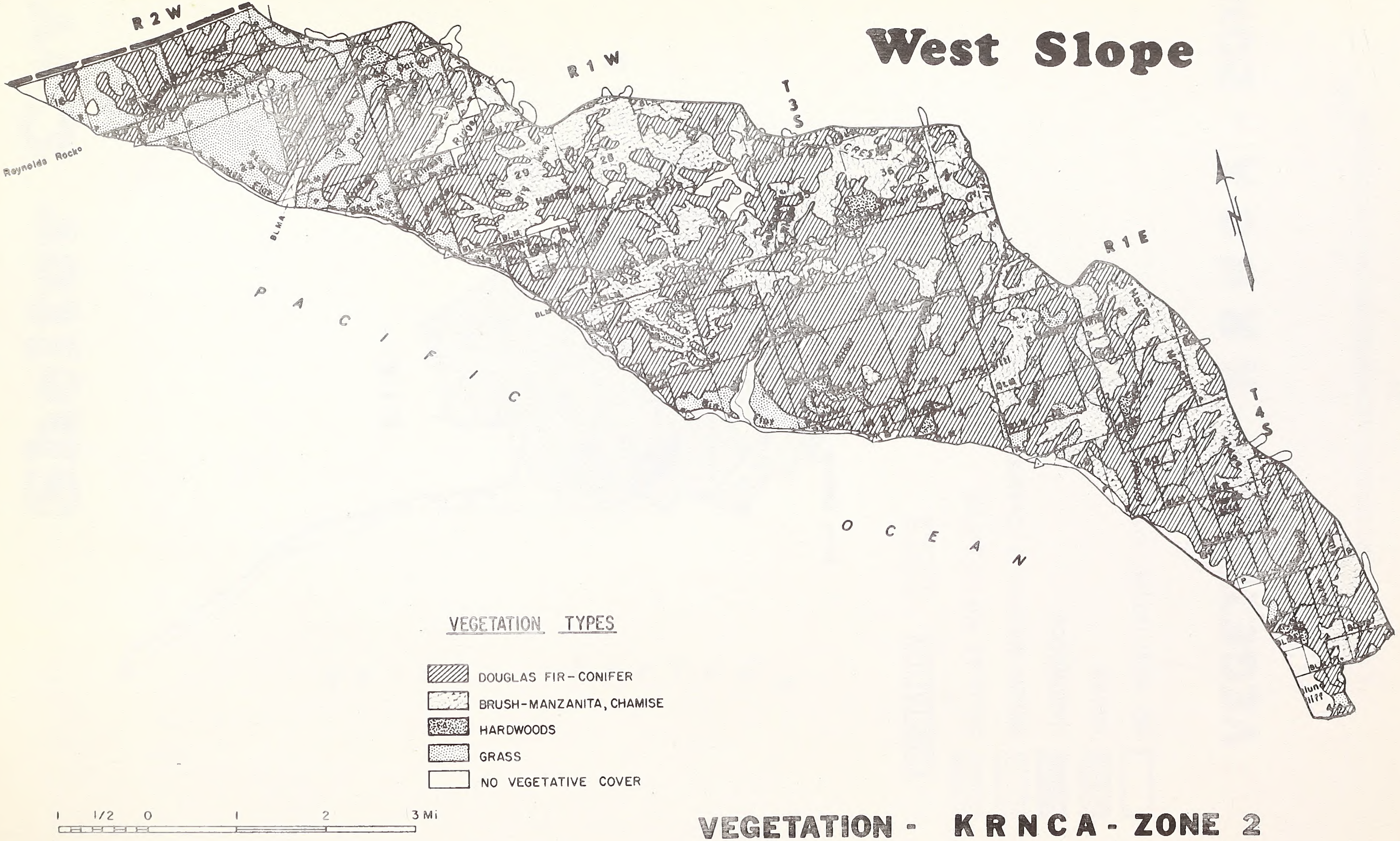
▒ HARDWOODS

░ GRASS

☐ NO VEGETATIVE COVER

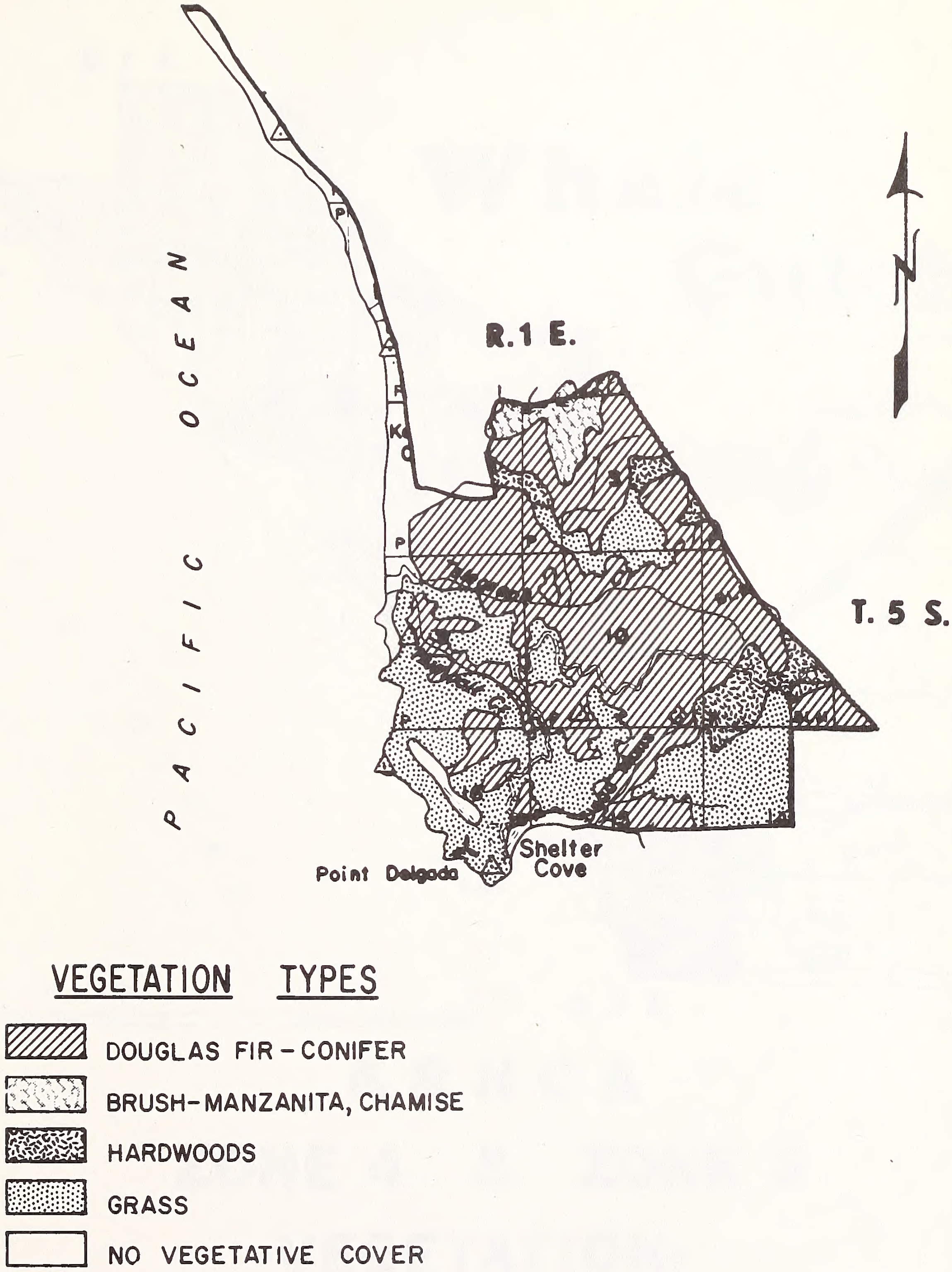


West Slope

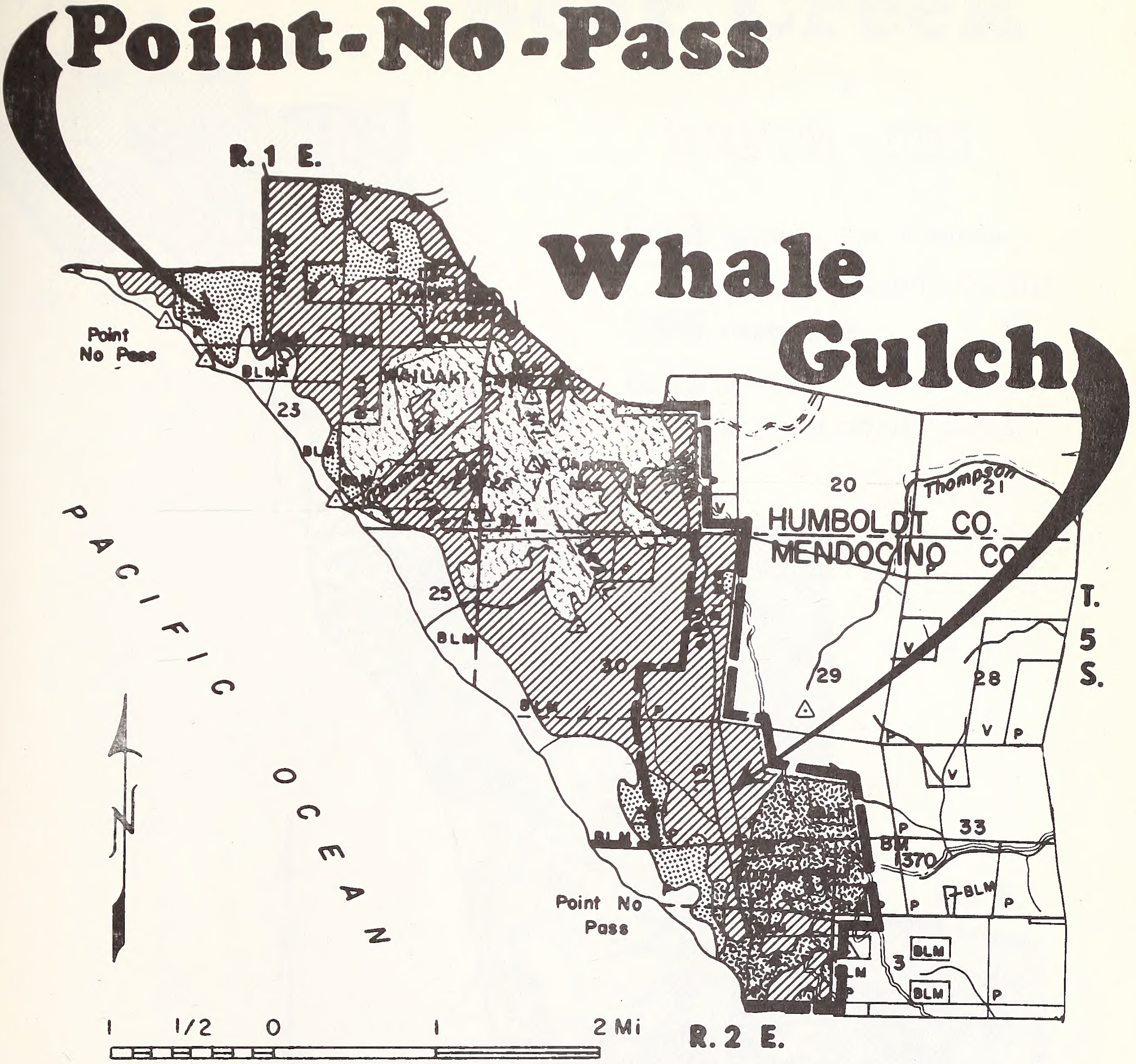


VEGETATION - KRNCA - ZONE 2

Shelter Cove



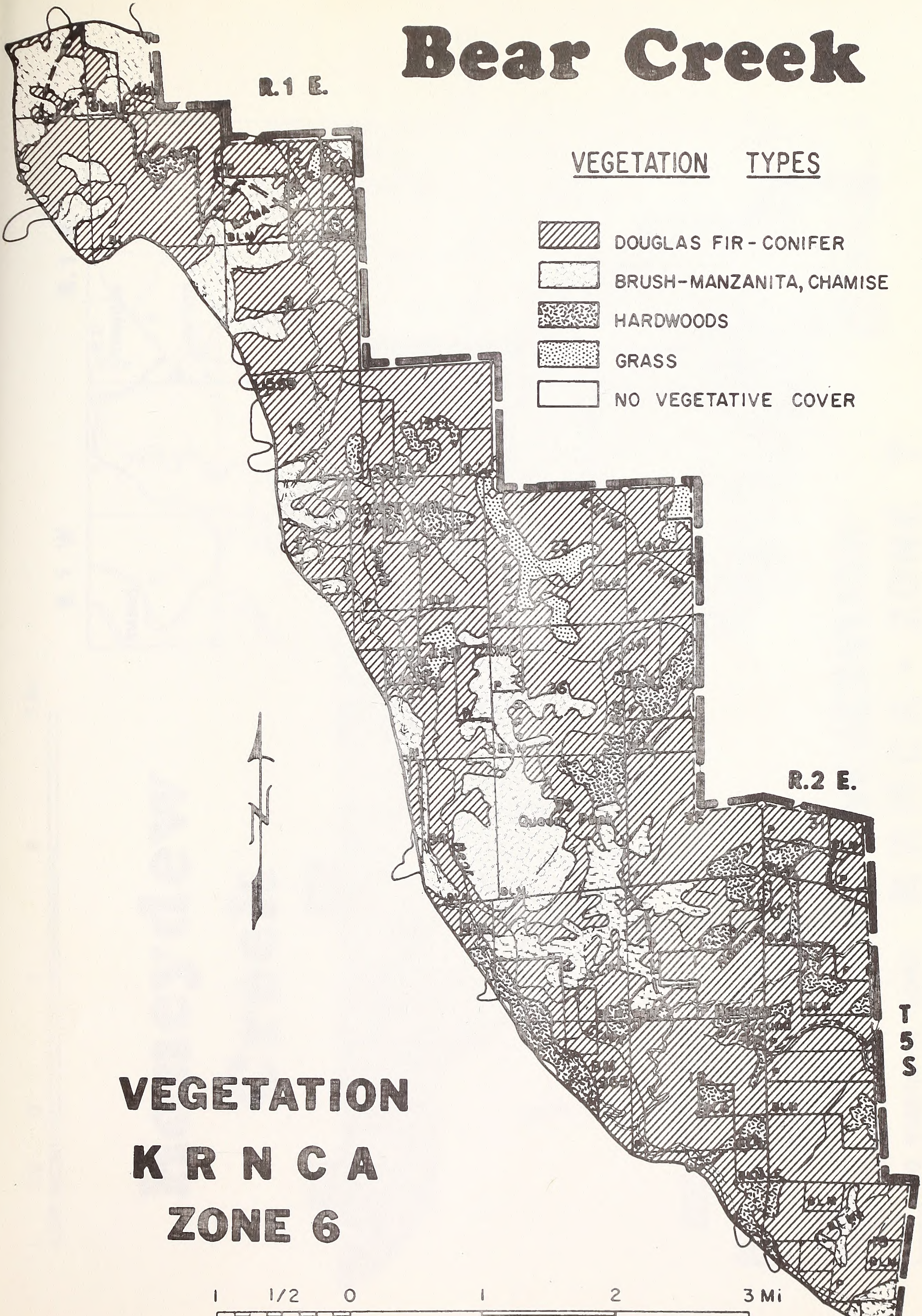
VEGETATION- K R N C A - ZONE



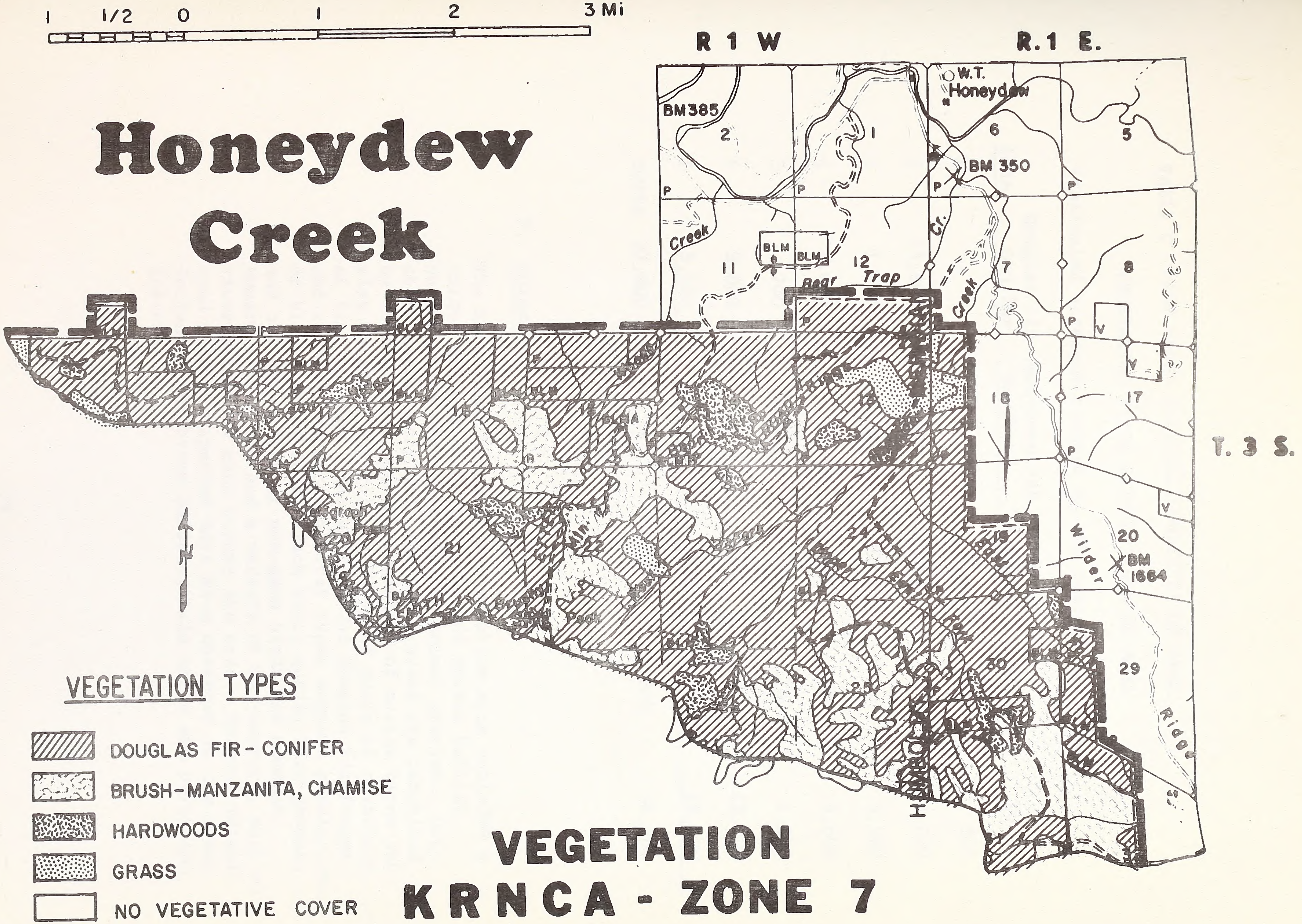
KRNCA
ZONE 4 & ZONE 5
-VEGETATION-

VEGETATION TYPES

- ▨ DOUGLAS FIR—CONIFER
- ░ BRUSH-MANZANITA, CHAMISE
- ▩ HARDWOODS
- ▒ GRASS
- ☐ NO VEGETATIVE COVER



VEGETATION
KRNCA
ZONE 6



Honeydew Creek

VEGETATION
KRNCA - ZONE 7

TABLE V KING RANGE NATIONAL CONSERVATION AREA

VEGETATIVE TYPES WITHIN PLANNING AREA

(estimated acreages rounded to the nearest 100 acres)

Zone	Douglas Fir Conifer	Northern Oak Woodland	Coastal Prairie	Barren	Total
1	-	-	200	100	300
2	14,800	5,300	2,100	800	23,000
3	1,900	300	1,000	300	3,500
4	2,000	800	300	500	3,600
5	700	400	100	100	1,300
6	9,800	1,900	300	-	12,000
7	8,600	1,600	300	-	10,500
TOTAL	37,800	10,300	4,300	1,800	54,200

9. Animals

The King Range National Conservation Area contains a unique mixture of terrestrial and marine habitat, supporting a wide diversity of animal species. Offshore rocks, kelp beds and tidal areas are inhabited by seals, sea lions and a variety of marine birds and play an important role in the life cycle of a variety of fish species. The terrestrial Douglas fir forest and coastal chaparral habitat types support populations of black-tailed deer, black bear, quail, blue grouse, and a wide variety of non-game birds and mammals. Numerous raptors and a variety of fur-bearers, such as river otter and mink occupy the area. Several threatened wildlife species have been observed in the area, including the brown pelican, bald eagle and peregrine falcon.

Terrestrial Wildlife. Black-tailed deer habitat relationships are keyed to the riparian and coastal habitat types, where cooler temperatures and available water are present during the prolonged drought period from June through September. Deer in the KRNCA are resident year-long, but populations do migrate altitudinally in response to weather changes and forage "green-up". During the period from October to May the grassland communities receive an influx of deer seeking succulent vegetation. The chaparral communities provide deer browse year-long.

There are no direct estimates of deer populations or herd composition parameters for King Range. The proportion of deer numbers to habitat acreage can only be estimated from the condition of the vegetation in the primary deer forage areas and concentration areas. Heavily used areas, such as riparian habitat and grassy openings, contain over 100 deer per square mile. More lightly used areas, such as the interior of the chaparral stands, contain over 10 deer per square mile. It can be concluded that the concentration areas are overpopulated and deer habitat is declining.

Black bear are present over the entire King Range, but are most often observed north of Big Flat and King's Peak. Bears prefer the Douglas fir forest, particularly the riparian areas where berry-producing shrubs are abundant. Huckleberry, raspberry and blackberry are widespread throughout the KRNCA, but are found in greatest profusion in cutover areas, which attract and concentrate bears.

Mountain lion are known to inhabit the KRNCA, but no population estimates have been made. Specific use areas have not been identified. Bobcat and coyote are apparently present in large numbers, based on observed sign and reports from local landowners.

California and mountain quail, blue grouse, gray squirrel, brush rabbit, black-tailed jack rabbit, mourning dove, and band-tailed pigeons constitute the upland game species in the KRNCA. All are distributed throughout the King Range, but each species demonstrates definite habitat preferences. Quail are most abundant in the riparian areas and nearby chaparral sites. Blue grouse are more specific to the Douglas fir forest and populations are concentrated in the northern half of the King Range. Gray squirrel prefer coniferous forest and hardwood habitats, concentrating locally in areas where

canyon live oak and tanoak are most dense. Band-tailed pigeons roost within the coniferous forest, but their food preferences take them to areas where manzanita and madrone berries are found. Mourning dove can be frequently observed along the grassy sections of the coastal beaches.

The entire King Range is apparently a wintering area for many raptors, particularly sharp-shinned and Cooper's hawks. Turkey vultures summer in the KRNCA and leave in September for more southerly wintering areas. No complete survey of osprey use has been made, but nests have been identified near the Mattole River, Big Finley Creek, and Bear Creek. Several osprey nests were destroyed north of Nooning Creek as a result of logging activities in the late 1960's.

Blue heron, river otter and mink are found in the immediate vicinity of the larger streams, in particular Honeydew Creek and the Mattole River.

Over 30 reptile and amphibian species have been identified. It is probable that many more inhabit the area.

Aquatic Wildlife. The Mattole River is the major inland terminus for nine tributary streams, whose headwaters lie within King Range. Additionally, twelve coastal streams flow directly into the Pacific Ocean. Many of these streams provide spawning and rearing habitat for steelhead, silver salmon and king salmon. About 80 miles of the King Range tributaries contain sufficient water to support fish populations. All of these streams are free-flowing, but contain some log jams and waterfalls which limit the passage of fish.

Coastal streams, those flowing directly into the ocean, arise high on the western slopes of King Range. Some headwaters approach the 4000-foot elevation. Stream gradients often exceed five percent and streams are often less than three miles in length. Stream bottoms are composed of large alluvial material, containing large amounts of rock and fines, that fill in pools and provide unsatisfactory salmonid spawning areas.

The inland streams flowing into the Mattole offer much better salmonid habitat. Drainages are larger and, while headwaters are often as steep as the coastal

streams, the inland stream gradients moderate quickly so that there are long stretches of riffle area and sizeable pools. A summary, in the Resource Analysis, of the nine inland streams shows that they contain 75% of the King Range stream fish habitat, 96% of the total spawning area and 99% of the prime spawning and rearing habitat.

Rearing of juvenile steelhead and salmon occurs to some extent in most streams, but low summer water flows and high temperatures limit rearing capacity. Bear Creek and Honeydew contain numerous steelhead juveniles during the summer, since pool habitat and cool water temperatures are not limiting. Coastal streams also contain juvenile fish, but these migrate to the ocean immediatley after the first high water in the fall.

Resident fish species are limited to sculpin and rainbow trout. Sculpin are present in every stream in low to moderate numbers. Use of stream habitat by resident rainbow trout is hard to determine because of overlaps with steelhead habitat. Whale Gulch is the only stream restricted solely to resident trout. Lampreys migrate into many of these streams and nests have been observed in Honeydew Creek.

No extensive quantitative studies have been made of aquatic invertebrates in King Range streams. The unit resource analysis contains information from Geological Survey studies of bottom organisms.

Marine Wildlife. There are 25 miles of coastline within King Range, providing areas of offshore rock, kelp beds, and tidal habitat. Offshore rocks are concentration areas for stellar and California sea lions, harbor seals, and a variety of sea birds. Rocks used as rookeries by cormorants are identified in the resource inventories. The entire coastline is utilized by marine wildlife, but Gorda Rock and the general Punta Gorda offshore area is an important concentration area for the stellar sea lion and other marine mammals.

Kelp beds are important to the life history requirements of many species of wildlife, particularly seals and sea lions. Preferred food sources include abalone, sea urchins, limpets, turban snails, dungeness and rock crabs, mussels and barnacles, all of which are associated with shoal areas and rocks interspersed with beds of kelp.

The coastal section from Big Flat to Horse Mountain was initially considered to be potential sea otter habitat, since sightings were reported at Shipman Creek. However, subsequent inventories indicated that sea otter habitat is marginal. The primary limiting factors are inadequate kelp beds, heavy seas, and a general absence of sheltered areas.

Threatened Wildlife Species. Threatened wildlife species in the KRNCA include the brown pelican and peregrine falcon. The bald eagle has been sighted in the area,but no nests have been identified. There is evidence that the spotted owl, a potential addition to the threatened species list, is present in the Douglas fir forests at the head of Honeydew Creek.

10. Ecological Relationships

One of the most significant relationships in the KRNCA is the successional pattern in the Douglas Fir Forest. This pattern typically follows a disturbance which apparently allows simultaneous seeding-in of the three major species. Madrone dominates the site first, attaining an average height of 15 to 20 feet and, upon its demise, the tanoak pushes through the dense crown canopy. When both hardwood canopies have deteriorated, the Douglas fir (which may be found in suppressed seedling and sapling form beneath the madrone canopy) takes over. Mature Douglas fir stands are, in many cases, particularly at higher elevations, devoid of any understory. The normal pattern must apparently include a disturbance following maturity of the Douglas fir if the resulting hardwood stand is to have an understory of conifers, for the latter will only seed-in on bare soil.

Competition between deer and livestock is a serious limiting factor along the coast. Compounding the effect of this factor is the gradual reduction in available forage, resulting from successional changes in the areas covered by hardwoods and chaparral.

The habitat requirements of the spotted owl includes old-growth stands of coniferous timber. The old-growth conifers provide nesting habitat that is critical to maintenance of the species.

11. Human Populations

The Shelter Cove subdivisions contains several full-time residents (about 30 families) and an undetermined number of people live in the Whale Gulch area, (50-100). There are probably less than a dozen other full-time and seasonal residents scattered over the rest of the area. The total population in the KRNCA is estimated to be 185. In the immediate influence zone, as defined in the economic analysis, the population is estimated to be 1,215. A more detailed discussion of demography and factors influencing economic well-being can be found in the Economic Analysis of the KRNCA Proposed Management Plan and Program.

There are over 4,000 house lots in the Shelter Cove subdivision. It is estimated the family dwellings will continue to be built at a rate of 5 houses per year, based on experience of the past several years.

12. Land Use

The development of the national resource lands prior to the passage of the King Range Act in 1970 consisted of harvest of 9.2 million board feet of timber, construction of 10 miles of road, opening a manganese ore mine (now inactive), and maintenance of 21 miles of road and 23 miles of trail. There has been no development except for trails on the national resource lands fronting the ocean.

a. Timber

Humboldt County's timber harvest is the largest in California at 1,006 million board feet in 1970. This is 22% of the entire California harvest. For the foreseeable future the county is expected to continue to be California's largest volume timber producer.

Sustained yield management is common on the larger ownerships in the county, but in areas such as King Range timber on the predominantly small ownerships continues to be mined rather than managed for sustained yield.

b. Agriculture

There is no significant agricultural activity within the King Range National Conservation Area except for extensive livestock grazing in the northern one-third of the KRNCA. This is almost exclusively sheep grazing. The bulk of the forage grows on land in private ownership having ocean exposure. This is used on a year-round basis with a minimum of stock management. Approximately 1% of Humboldt County's sheep forage is produced in the KRNCA. The Shelter Cove area, which used to produce crops and livestock for the San Francisco market, now is occupied by a subdivision and has passed out of agricultural production. Very little of the rest of the KRNCA has soils which are compatible with agriculture. People living in the area frequently raise home gardens but this is not considered a significant agricultural activity.

At the present the BLM leases only one area within the KRNCA for livestock forage. This area contains 160 acres and furnishes 76 animal unit months of forage, enough to support about 32 sheep on a year-round basis. In the KRNCA as a whole about 1274 animal unit months of forage is available for domestic livestock. This supports about 530 sheep, grazing all year long.

c. Recreation

Recreation use of the KRNCA is confined largely to the summer season due to the rainy and windy conditions which typify much of the area in the winter. The exception is the steelhead season in the Mattole River which opens on November 15.

Shelter Cove is the greatest tourist attraction in the KRNCA. In addition to the subdivision, at Shelter Cove there are two motels, a restaurant, a grocery store, a fishing supply store, an airplane landing strip, a commercial fish purchase and storage facility, a boat rental and launching facility, and a privately-owned campground with 70 spaces. In the summer of 1973 1,052 parties used this campground. In the summer of 1973 there were almost

890 boat rentals and 1,780 private boats launched. Approximately 3,500 people fished from the shoreline making a total of about 11,500 people using the fishing and boating resources at Shelter Cove. This attraction helps to explain the fact that there is two to three times as much recreational traffic on the Shelter Cove Road as on the roads in the northern area.

In addition to the fishing, many people visit Shelter Cove for beach recreation. The beach from Telegraph Creek northward is a popular spot for dune buggy and four-wheel drive vehicle operation. Other people use the beaches for hiking, camping, picnicking, and sun-bathing. This is one of the few places in northern California where all of these opportunities are available. Approximately 1,100 people used the beach for off-road vehicle operation and 650 used it for hiking in the summer of 1973.

Away from Shelter Cove recreation use is much less intensive. The BLM maintains two campgrounds south of the Shelter Cove Road. From these road access to Shelter Cove is convenient enough for some people to camp there while carrying out most of their recreation activities at Shelter Cove. There are two more BLM campgrounds between Queen Peak and Saddle Mountain. They are convenient for access to the high ridges but not to the ocean. Hiking and hunting are common activities in that area. In the summer of 1973 the southern campgrounds accommodated 16 parties per day and the northern ones 5 parties per day.

Along Nooning Creek and adjacent areas of the Mattole River swimming and sun-bathing are popular, though no public facilities have been developed to support these activities.

The highway from Fernbridge, through Honeydew, to Bull Creek is a popular route for an afternoon drive by people living in the Humboldt Bay area. Recreation travel on weekends over this route is much greater than on week days. Very few vehicles go from Honeydew to the Shelter Cove Road via Wilder Ridge or the Kings Peak Road.

The bulk of the recreation and tourism activities in southwestern Humboldt County are concentrated along Highway 101. Only a very small percentage of the motels, restaurants, camps and automotive service facilities are located away from that major route. People who come from places outside of Humboldt County stay almost exclusively along Highway 101.

13. Public Services

Many of the people living in the southwestern Humboldt area are distant from public school facilities. High school students in the southern portion of the KRNCA commute to the high school at Miranda by bus. Those in the Honeydew and northern portion of the Area attend the school at Ferndale on a boarding basis. Though there are more elementary schools than high schools in southwestern Humboldt County, there are no schools in the KRNCA. An elementary school at Whitethorn serves people living in the southern part of the area and one at Petrolia serves people in the north.

Fire protection and suppression services throughout the KRNCA and most of the rural areas of the southwestern Humboldt area are provided by local volunteer departments and the California Division of Forestry (CDF). There are volunteer fire units at Petrolia and Whitethorn. A system of hydrants, a pumper truck, and a professional fireman provides protection at Shelter Cove.

The CDF provides wildfire protection to the private and public lands. CDF fire suppression costs are not assessed to the private landowners unless they are found to have been responsible for starting the fire. Private landowners contribute to the CDF operation by paying a tax based upon amount of acreage and land use. The BLM has an agreement with the CDF whereby the BLM pays suppression costs for the part of the suppression activity which has taken place on public lands.

Law enforcement in the southwestern Humboldt area is provided by the California Highway Patrol and the sheriffs of Mendocino and Humboldt Counties. The Highway Patrol has a substation

at Garberville but its officers enforce only the California Vehicle Code and control vehicle movement on roadways. Non-vehicle type offenses are the concern of the sheriff's department.

The Humboldt County sheriff maintains a substation at Garberville and a resident deputy at Petrolia. The Mendocino County portion of the southwest Humboldt area is rather inaccessible to the Mendocino County officers because the nearest ones are stationed at Leggett, Laytonville and Fort Bragg. Since there is at present no cooperative agreement between the Mendocino and Humboldt County sheriffs covering this area, it receives very little law enforcement service.

Solid waste disposal in the KRNCA and the influence zone is provided by Humboldt County via a container system. Containers for collection of local waste materials are set at Shelter Cove, Thorn Junction, and between Petrolia and Honeydew. Mendocino County provides no waste disposal facilities for its portion of the area. It is not known whether waste from Mendocino County finds its way into the Humboldt County containers.

In southwestern Humboldt County almost all of the roads are maintained by the county. The only state highway in the area is Highway 101.

Table VI shows the amount of road maintained by the counties in the KRNCA. Only the Shelter Cove Road and the roads in the Shelter Cove subdivision are paved. The counties' maintenance expense on the paved roads appears to be substantial but data is unavailable at this time. The unpaved roads receive maintenance in the form of road grader work once or twice a year.

TABLE VI

County Roads in the KRNCA

	Miles
Mendocino County	4
Humboldt County	
Chemise Mtn. Road	2
Kings Peak Road	10.5
Shelter Cove Road (boundary to Toth Road)	6
Roads in Shelter Cove Area	41
	63.5

Water, sewer, electrical supply, golf course, and building code enforcement are provided in the Shelter Cove subdivision by the Resort Improvement District No. 1. This is a special district created to service the Shelter Cove subdivision. It is supported by a property tax on land and improvements in the subdivision.

14. Aesthetics

The King Range Area has long been noted for its aesthetic qualities. The view of rugged mountains rising abruptly from the sea offers a scenic experience which is extremely rare along any coast. The more than 20 miles of undeveloped, nearly unroaded beach offers an experience of solitude which is also extremely rare along any coastline. The sounds of the West Slope are all the natural sounds of wind, waves and animals, with the exception of Shelter Cove subdivision where man's activities are encountered. The smells encountered range from those of marine tidelands to forested areas of hardwoods, conifers and shrubs.

East side views are those of forests and brush-covered mountains, interrupted by previously logged areas where rehabilitation was unsuccessful or not attempted. The scenic attributes of this area are not as high as on the West Slope. However, there are mountain streams which are relatively clear during summer seasons, scenic rock cliffs and large expanses of unbroken forest canopy.

15. Human Interest Values

The King Range Area is very interesting geologically, due to the relatively recent uplifting and still forming hills and slides. The thin soil mantle in the formation stages could serve a useful function in research on soil formation. Some threatened species of animals such as brown pelican and peregrine falcon can be observed in the Area.

The King Range Area is also rich in archeological values. There are several known areas which hold remnants of coastal Indian cultures such as burial grounds, campsites and middens. There are some potential areas where further studies may uncover additional archeological values. The National Register of Historic Places was consulted and a check was made with the State Historic Preservation Officer to determine whether any sites listed on the National Register or proposed for nomination would be impacted by the Management Program. There are no such sites in the KRNCA.

16. Environmental Disturbances

There has been considerable disturbance to the environmnent within the King Range boundary over the past several years.

a. Subdivision

Probably the most notable environmental impact is the Shelter Cove subdivision development. Many miles of surfaced road have been constructed on quite steep side slopes and in very unstable soil types. These actions by man have apparently triggered several landslides and slumps.

b. Logging

Much of the private land in the Mattole River drainages (Zones 6 and 7) has been heavily logged. There are few buffer strips left along the streams and in many cases considerable damage has occurred directly in the stream channel. Streams are exposed

to direct sunlight and have noticeable amounts of debris blocking water flow and fish movement.

c. Roads

Logging roads were often constructed very near the stream. This has caused substantial amounts of sediment to accumulate in several tributaries of the Mattole River.

d. Burning

For many years, ranchers along the north end of the King Range (in Zones 6 and 7) have practiced brush burning. This frequent (often annual) burning is intended to improve grazing. The practice has changed the ecologic balance of the area. Significant erosion has been caused on the slopes and increased sediment has been deposited.

e. Instability

Geologic information indicates that the area is relatively young geologically and that it is extremely unstable. Roads provide a good insight into the soil type and stability in general. Road cuts and fills are very slow to stabilize and require a great deal of maintenance. The visible scars remain for years. The Honeydew Road constructed by BLM in 1963-66 in Zone 7, has caused some plainly visible cutbanks, several slides and considerable movement of soil and debris into streams. It is just now becoming somewhat stabilized.

f. Landslides

Some logging has occurred on the ocean side of the range. The visual scarring and apparent slow revegetation of these areas has left some clearly visible openings in the vegetative cover. These openings are readily seen from both the ridgetop trail and some beach areas.

g. Mining

Mining activity has caused considerable disruption at the Queen Peak mine, through both excavation at the mineral site and construction of access roads to the site. Again, the soil type and instability have resulted in visual impacts, loss of vegetative cover and apparent siltation and sedimentation in streams on the Mattole drainage.

B. Probable Future Environment Without This Proposal

The King Range Area is in transition from the post-war development boom to an uncertain future. Reflecting the statewide situation, the future of the Area will be greatly affected by the mass of federal and state environmental legislation that developed in the late 1960's and early 1970's. Increasingly stringent regulations of development is already having observable impacts on the California coast, as in the case of the Coastal Zone Conservation Act. Economic changes and fluctuations in the suppy of energy resources have already begun to result in some changes in lifestyle. While the ultimate extent of these changes is unknown, some change in the future of rural California can be anticipated.

Taking the inherent uncertainty associated with prediction of future change into account, it is still possible to make assumptions and reach some conclusions about the future environment that would exist in the absence of the proposed Management Program.

It is assumed that the future environment would essentially be similar to the status quo, as modified by the continuation of present trends in land use, resource development, and environmental controls. The land ownership pattern, an intermingling of national resource lands with private ownerships, would remain substantially unchanged. Actions are not likely to be coordinated, but would take place in accordance with the objectives and capabilities of each individual landowner. The primary objective of most private landowners can be expected to be short-term profit maximization. In the past, meeting this objective has resulted in extensive

subdivision, road construction, essentially uncontrolled timber harvesting, and land clearing and burning. It can be anticipated that timber will be harvested as soon as it reaches merchantable size, that interest in subdividing will resume if the second-home market again becomes firm, and that land clearing and burning will continue.

III. THE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A. Area-wide Impacts

The proposed King Range Management Program will implement the provision of PL 91-476, an Act to establish the King Range National Conservation Area. The implementation of this program will affect the environment of the King Range in several ways. Establishment of the Area's boundaries will define the area within which the provisions of the Management Program will be implemented.

Identification of zones sets the framework of primary and secondary uses on a specific geographic base within which standards of compatibility may be applied. The planning process, leading up to the identification of zones, was based on an inventory of resource capacity and environmental elements. Zoning, therefore, determines to a considerable extent the environmental impacts that will occur in the Area. Many of the actions included in the Management Program apply to the entire KRNCA or to several zones within the Area. The impacts of these actions are addressed in the following discussion, after which consideration is given to the significant impacts that will occur in the various zones.

It is not feasible to identify or adequately address the environmental impacts of the many hundreds of individual actions proposed in the plan. For instance, several hundred stream clearance projects are proposed. Analysis of their environmental impacts must await plan implementation. Additional environmental statements will be prepared if it is subsequently determined that the specific actions will cause significant environmental impacts.

1. Impact on Recreation

The King Range is an area of unique recreation values. The most prominent of these is the juxtaposition of rugged mountain slopes with 30 miles of remote, undeveloped ocean beach. The State's "California Coastline Preservation and Recreation Plan" terms the King Range "an outstanding example of several geologic features and biotic communities."

The King Range Area is one of a relatively few stretches of publicly-owned beaches in Northern

California that have been extensively used by recreation vehicles.

There are national resource lands in three of these areas and several others are included in the Humboldt County park system.

The beach and the fish, birds and animals along it are the major attractions for most people visiting the King Range. The upland ridges of the range also attract people because of their scenic values, but the rugged terrain attracts less active use. Major recreational facilities in the proposal are shown on the maps of Zones 1, 2 and 3, following page 79 of the Management Program.

Estimates of current recreation use indicate that over 56,000 visitor use days occurred in the King Range Area over the past year. General recreation use is by far the major component of visitor use figures in the KRNCA, followed by sightseeing and ocean fishing. Backpacking, hunting and hiking are also important and growing recreational uses. The Bureau has constructed four campgrounds with a total capacity of 33 family units, 20 miles of hiking trails, and 13 miles of multi-purpose road to accommodate these uses. There is also a privately operated campground at Shelter Cove.

Projections indicate that recreation use will increase at a rate of 5 percent annually in the absence of any further action to establish the Area or develop additional facilities. Publicity associated with the proposed establishment of a National Conservation Area and development of planned recreational facilities would change the projected annual rate of increase in the first five-year period to 20 percent, then dropping off to a 10 percent annual growth rate.

The projected doubling of recreation use in the next five years will lead to increased congestion along the coastal strand and at some times in the inland zones, detracting from the mood of isolation, characteristic of the Area, and the enjoyment of the recreation experience.

The separation of recreation vehicle use and other types of recreation use in Zones 1, 2, 3 and 4 and within the proposed boundary expansion area, through

designation of mechanized use areas and areas closed to vehicular use, will decrease the possibility of accidents involving vehicle-mounted and nonvehicular recreationists. The separation of uses will also enhance the enjoyment of the recreational experience by both classes of recreation users, through decreasing the psychological stress resulting from potential conflicts and anticipated safety hazards.

2. Impact on Water

Water yield is currently estimated to be 82% of total precipitation, while consumptive use is inconsequential. The area-wide actions will have no significant impact on the quantity of water produced.

Sediment production is primarily generated by the cutting of streams at the toe of colluvial deposits. Currently, 80% of the sediment load is a product of natural erosion. Construction of 37 miles of new road and reconstruction of 30 miles of existing road will, at least temporarily, increase sedimentation. Careful road design and close supervision of construction can minimize sediment production. However, a significant increase in sediment production will occur, given the inherent instability of geology and soils in the King Range, during construction and will continue until slopes are stabilized, which may require 15-20 years. Mining regulations will reduce the impact of mineral exploration on sedimentation.

The restrictions on use of mechanized fire control equipment in Zones 2 and 4 will lessen the likelihood of increases in sedimentation on the coastal slopes. However, natural sediment production is so great on the Pacific Slope that this decrease in sedimentation will not be significantly noticeable.

The removal of log jams on 35 miles of stream may cause bank-caving and an increase in sedimentation. Since most of this work will be accomplished through use of hand labor, sediment production will be minimized. Timber harvest, road construction and recreation development will be prohibited within 1/4 mile of Honeydew Creek, Big Finley Creek, and Bear Creek to protect possible bald eagle and osprey use areas. This action will ensure maintenance of a vegetative screen along the largest streams within the KRNCA and will reduce sedimentation.

The North Coast Regional Water Quality Control Board has established water quality objectives for the North Coastal Basin, an area which includes King Range. One of these objectives is that turbidity not be increased more than 20 percent above natural background levels. Because of the steep topography, unstable soils and high precipitation in the King Range, it is likely that road construction activities will result in temporary increases in turbidity above this level. Careful design and construction techniques can reduce the probability of this occurrence, but cannot eliminate it.

3. Impact on Soils and Vegetation

Vegetation in the King Range falls into three plant communities - Douglas Fir Forest (70%), Northern Oak Woodland (19%), and Coastal Prairie (8%). An additional 3 percent of the Area, primarily landslides, beaches and flood terraces, is classified as barren.

The Area has the capacity to produce 5.8 million board feet of timber on a sustained yield basis, considering both public and private land. However, only about one-third of this potential (1.9 million board feet) will be available for harvest annually because of the planned curtailment of timber harvest in the westside zones, as well as reservation of streamside and scenic buffer strips and use of partial cutting systems on the remainder of the area. Management for timber production is planned on only the east slope of the range, in Zones 6 and 7.

The unavailability of the timber resources of the westside zones, resulting from implementation of the program, will affect employment. The extent of this effect has not been determined, but is estimated to be negligible.

Exclusion of timber harvest in Zones 2 and 4 will protect soils and site productivity. Erosion losses will be prevented, since disruption of vegetation cover will be precluded.

The area presently supports over 3,000 animal unit months of livestock grazing use. The Management Program will not significantly change the amount

of forage available but will reduce the season of use from 12 months to 6 months.

The Management Program includes extensive provisions for revegetating and stabilizing presently eroding watersheds and restoring timber sites to a production condition. Almost 2600 acres will be reforested in Zone 2 and the eastside zones. Brush conversion and planting will be carried out on 400 acres of timber soils (Josephine, Hugo, and Usal) that are presently covered with chaparral. Watershed stabilization practices - cross drainage, outsloping, fertilization and seeding - will be carried out on almost 1200 acres of abandoned roads and skid trails.

Construction of 37 miles of road in the westside zones will permanently remove 180 acres of vegetation. Construction of the planned recreational facilities and parking areas will entail removal of approximately 100 acres of vegetation.

4. Impact on Wildlife

Terrestrial Animals: Raptor habitat will be protected within 1/4 mile of Big Finley, Bear and Honeydew Creeks until the status of raptor use in these areas can be determined. Bald eagle have been observed in the Area and osprey nests have been sighted along these streams. This action will preserve raptor habitat, including potential habitat for the bald eagle - a threatened species. It will also have a beneficial impact on other species, for example otter, mink and blue heron, that are dependent upon streamside habitat.

The entire King Range provides winter habitat for raptors, such as the sharp-shinned and Cooper's hawk. The spotted owl is present in the headwaters of Honeydew Creek. Turkey vultures utilize the Area in the summer. Osprey are known to nest along the Area's stream courses and bald eagles have been sighted and the peregrine falcon is suspected to be present. The provisions of the plan that call for preserving raptor habitat and prohibiting disturbing activities near nests will help maintain a portion of the dwindling habitat of these species.

The effect of increased recreation use upon wildlife will vary from zone to zone, since attractions

for recreation use vary, but it will have a potentially significant adverse impact upon raptors and wildlife species, such as the mountain lion and bald eagle, whose habitat requirements include remoteness from human presence.

While little data is available on populations or territorial use area, mountain lions are known to occur in King Range. These animals are extremely secretive and intolerant of human presence. Road construction, by opening up previously inaccessible areas, may adversely affect the animals.

Aquatic Animals: Approximately 80 miles of the King Range streams contain sufficient water to support fish populations. The nine eastslope tributaries of the Mattole, in particular, provide important spawning and rearing habitat for steelhead, silver salmon and king salmon. The Management Program provides for clearance of stream-blocking log jams on 35 miles of the King Range streams, increasing available spawning and rearing habitat by approximately 50 percent.

Sedimentation resulting from construction of 37 miles of road in Zones 6 and 7 may adversely affect anadromous fisheries in Honeydew and Bear Creeks. Increased sedimentation, primarily from logging and road construction, will be detrimental to the habitat of these species. But, because of existing natural and man-caused sedimentation problems, and the natural flushing action of winter rains, the effect of this additional sediment in the streams is expected to be temporary and not of long-term significance.

Marine Mammals: Increased recreation use of the area greatly increases the potential for disturbance of marine wildlife species in the opinion of Bureau wildlife specialists. The area offshore Punta Gorda is a concentration area for stellar and California sea lions, harbor seals and marine birds. Up to one sea lion carcass per mile has been found along King Range beaches, some with evident bullet holes. Allowing recreational use along the beach in Zones 1, 2 and 3 will increase human - animal contact and possibly increase the shooting of these animals. Nesting of marine shorebirds, such as killdeer and sandpipers, could be particularly disrupted by vehicle use during spring and early summer, but such general recreation uses as hiking can also disturb nesting birds.

5. Impact on Human Populations

One measure of the environmental impact of an action is its effect upon the capability of a community to provide essential services. In the case of the KRNCA, the acquisition of 17,000 acres of private land will have an impact on community well-being. Land acquisition through purchase would result in removal of land from the property tax rolls; whereas exchange of lands within Humboldt and Mendocino Counties would not have the same effect. A more detailed discussion of these effects can be found in the Economic Impact Analysis of the King Range National Conservation Area Plan and Program, but they are synopsized here.

By the provisions of the King Range Act, all exchanges must be for properties within the same county. Since parcels exchanged would be approximately the same value, the net effect upon the tax rolls of an exchange should be negligible. However, when exchanges involve parcels in different school districts, there would be a resulting redistribution of taxable property value between the districts. Private ownership in the KRNCA will decrease from an original 44 percent to about 12 percent in 1968. Additionally, when an exchange involves a nontimbered parcel exchanged to the government for a parcel covered by mature timber, there may within a few years be a net loss to the county tax rolls. This would result if the timber were harvested and the assessment of that parcel was subsequently reduced in accordance with California law.

A compensating factor would be the payments which go to the county when the BLM sells timber within the county. By law, 5% of the sale price of timber from the BLM lands goes to the county. This may result in annual payments to Humboldt County in the amount of $12,000. The county and school districts may also gain tax revenues through increased assessments resulting from increased property values of lands adjacent to the government-owned lands. This could readily result as the benefits of the plan implementation begin to be realized. Permanent ownership tenure, land rehabilitation, fishery habitat improvement, improved access, and coordination of land use in the King Range National Conservation Area would yield spillover benefits, or external economies, to the private landowners and residents

both inside the Area boundaries and those in the surrounding vicinity. Independent appraisal reports indicate that the passage of the King Range Act and subsequent activities have already resulted in a significant increase in some property values and assessments

The projected visitor use will render some of the county roads leading to and through the KRNCA inadequate. Humboldt County has estimated the 1973 cost of improving these roads to be $150,000 to $400,000 per mile. It is not possible to estimate a schedule and total cost for road improvement because of the great number of unknowns involved. The Shelter Cove Road and Mattole Road, through Humboldt Redwood State Park, will be inadequate to handle future traffic even without the KRNCA program. There are no federal programs which would reimburse the county governments for their increased road construction requirements resulting from the KRNCA program.

There will be some increase of risk to human safety resulting from fires. This will result from the increased risk of fire occurrence and risk to increased number of people in the area. Fire suppression costs can be expected to increase. Fire protection in the KRNCA is provided by the California Division of Forestry.

6. Impact on Minerals

The mineral development potential of the KRNCA is limited. Extensive mineral inventories indicate that the only mineral that has been produced in a significant quantity is manganese, from the Queen Peak Mine in the Bear Creek drainage on the east slope of the King Range in Zone 6.

Acquisition of private lands within the KRNCA will increase the potential availability of lands for mineral exploration and development because these lands will be opened to the operation of the mining laws. Over 17,000 acres of land are scheduled for acquisition, but a significant proportion of this acreage lies in zones where mineral development will be restricted to meet plan objectives and ensure compatibility with primary uses.

The proposed Management Program will have no significant effect upon the possible future resumption of mining at the Queen Peak Mine.

The proposed mining regulations will allow mineral development in areas where it is compatible with primary uses. Exploration may be permitted in areas, such as Zones 2 and 4, where primary uses preclude mineral development. However, mineral exploration in these areas may be restricted to allow use of only nonmechanized equipment and preclusion of surface disturbing activities. This may discourage mineral exploration in these areas. In all zones, mineral exploration and development will be governed by restrictions necessary to meet the plan's objectives and avoid conflicts with primary uses.

7. Impact on Historical, Archaeological and Natural History Values

A check was made of the National Register of Historic Places and the State Historic Preservation Office was consulted to determine whether any sites listed on, or in the process of nomination to, the National Register were located in the KRNCA. There are no sites in the KRNCA that have either been placed on the National Register or have been nominated.

The King Range Area contains many archaeological values. The planned surveys of archaeological and historical resources will help ensure that these values are identified and protected so that inadvertent destruction will not occur. Early completion of these surveys is essential since factors, such as the projected increase of over 100 percent in recreation visitor use, will greatly increase the risk of destruction of these cultural resources or removal of them from their cultural context.

8. Impact on Fire Risk and Hazard

With a projected increase of approximately 68,000 visitor-use days, an increase in man-caused fires can be expected in the KRNCA. Most of these fires are expected to occur near roads, since most of the projected increase in fire risk will occur in these defined travel corridors. The preclusion of surface-disturbing activities in the westside zones (2 and 4) may lead to an increased fire hazard in these

areas because of fuel buildups. The restrictions on use of mechanized equipment on the west side may increase acreage burned to some extent. The planned allowable annual burn in the area is 21 acres. The restrictions, however, should not significantly affect the annual acreage burned. Response time for motorized vehicles in much of the area is presently in the 2+ hour category. Additionally, the terrain is so steep and rugged that tractors would not be able to operate safely in much of the area.

9. Impact on Air Quality

Several hundred projects including stream clearance, road construction and logging are proposed. All of these activities could cause temporary short-term degradation of air quality in the form of air pollutants from forest slash and debris burning, and dust. This is expected to continue only for the periods during which these projects are active and the impacts will be local only. The potential impacts are limited by the size of the projects which will be active at any one time. A more specific examination of the impacts of individual projects on air quality will be made during preparation of subsequent environmental analyses of these projects.

B. Specific Impacts of Zone Designations and Actions Planned Within Each Zone

1. Zone 1 - Punta Gorda

This zone includes 254 acres surrounding the old lighthouse. The primary use of this zone is recreation. Secondary or collateral uses include wildlife habitat and livestock grazing.

a. Impact on Recreation

Recreation activities are centered around the abandoned lighthouse and vehicle use along the beach. Vehicles will be permitted to use the beach from the north end of Zone 1 to approximately a point due west of the lighthouse. A parking area will be provided in the vicinity of the lighthouse. No vehicles will be permitted from the lighthouse to the southern border of Zone 1.

There can be significant conflicts between recreational uses on the beach, both emotional and physical. Many beach users come to this area to enjoy the unique opportunities for solitude and scenic beauty. Recreational vehicle uses also enjoy the scenic beauty, but use their vehicles both for transportation along the beach and for the joy and pleasure they get from the use of the vehicle itself. Those who prefer solitude are disturbed by the sight, noise, and night-time glare of headlights from vehicles. Therefore, within the mechanized use zone, the enjoyment of those who prefer solitude will be lessened by the use of vehicles, while the enjoyment of those who get pleasure from the use of vehicles will be enhanced. The converse will be true within the areas in which vehicle use will be prohibited. On the physical side, vehicles present a safety hazard for hikers, beachcombers, picnickers, and campers, especially when the vehicles are operated at high speed.

The management program attempts to minimize these conflicts by providing areas which can be enjoyed by both types of recreational users.

Prohibiting recreation vehicle use south of the Punta Gorda lighthouse will prevent disturbance of the marine mammals, thus enhancing the viewing of these animals by recreation users.

b. Impact on Soils and Vegetation

The Beach area is constantly washed by the tide, causing unstable slopes immediately behind the beach. Cutting and washing causes a constant undertow cutting of the slopes and changing the angle of repose.

Vegetation in the Area is divided into two types: a perennial grass type dominated by velvet grass and California oatgrass, and an annual grass type dominated by wild oatgrass and dogtail grass. Heavy grazing and conversion from timber to grass has affected plant composition and density. A deferred grazing system will be implemented, allowing 117 sheep to graze the area from June 1 to October 31, each year (117 AUM's). This system is designed to favor establishment of California oatgrass, a perennial species. Removal of sheep grazing from the beach, which is part of the plan, will lessen conflicts between livestock and recreation users and will decrease the present total impact on beach vegetation. Development of recreation facilities will involve disturbance of up to 2 acres of vegetation. The impact of this development will be negligible, except on the immediate site.

c. Impact on Water

Development of a 1- or 2-acre parking area is planned at Punta Gorda, with water and sanitary facilities planned for development in the vicinity of the lighthouse. Discharges affecting water quality would be in contravention of the designation of the ocean waters as Areas of Special Biological Significance because this designation allows absolutely no discharges affecting water quality. These facilities will not discharge into the river or ocean; therefore, the impact on water quality is expected to be minimal.

d. Impact on Wildlife

The offshore waters in this zone are concentration areas for stellar and California sea lions, and a variety of marine birds. Allowing recreational vehicle use along portions of the beach will increase human-animal contact and increase the possibility of destruction of these marine animals.

Nesting of marine shorebirds, such as killdeer and sandpipers could be particularly disrupted by recreational use during spring and early summer. Recreational vehicle use would increase the probability of actual nest destruction, but hikers would also disturb nesting birds.

2. Zone 2 - West Slope

The zone covers about 23,000 acres. The primary use is recreation. Secondary uses are watershed, wildlife fisheries and livestock grazing.

a. Impact on Recreation

Development of parking facilities at the end of the Smith-Etter road and primitive camping facilities, at presently undetermined locations, will protect the relatively unspoiled character of the beaches, while allowing recreational enjoyment of the shoreline.

The feeling of isolation along the coastal strip is one of the major attractions of the KRNCA. Over crowding by recreationists will detract from the quality of the recreation experience.

b. Impact on Soils and Vegetation

Soils in this zone are highly susceptible to erosion. Major earthslides and slips in the zone have been attributed to earthquakes (the San Andreas fault lies just offshore). Slopes are steep and past human disturbances have exposed soil surfaces. Heavy precipitation has quickly led to gully cutting and rill erosion on these areas.

Over 10 miles of abandoned roads,and trails will be stabilized and revegetated, and approximately 1800 acres of cutover land will be revegetated. These actions along with implementation of grazing systems on over 2500 acres will increase ground cover and reduce presently occurring erosion.

About two-thirds of this zone lies within the Douglas fir community, another one-fifth is classified as Northern Oak Woodland, and the remainder is divided between Coastal Prairie and barren areas. Many of these barren areas are colluvium.

Developments on the west slope will be limited to preserve the primitive quality of the Area. This limitation will reduce the potential for future soil erosion.

The restrictions on surface disturbing activities in this zone will help maintain the continuity of vegetative cover. Grazing by domestic livestock and wildlife are the primary consumptive uses of the Area. The potential of the grazing land in this zone is estimated to be 1.1 acre/AUM. This capacity assumes maintenance of a continuous, vigorous stand of perennial and annual grasses.

Roosevelt elk will be introduced into the Big Flat area. These animals were historically present in the King Range, but were exterminated in the early 1900's. There is a potential for overgrazing in the Big Flat area, because of competition between the elk and domestic livestock. This potential is recognized in the plan, and it calls for elimination of livestock grazing in this area if it is established that such grazing conflicts with reestablishment of elk.

c. Impact on Wildlife

Reintroduction of Roosevelt elk into an area, historically used by elk, will broaden the range of these animals in California, presently limited to northern Humboldt and Del Norte Counties. This reexpansion of the elk's historic range will help ensure the stability of California's small population (2000 animals) of Roosevelt elk.

Because of differing food preferences and the limited area utilized by elk, serious competition between elk and deer is not anticipated.

The zone is a fawning area for deer and many wildlife species concentrate along the coastal strip during the summertime to take advantage of the cooler temperatures, greater water availability and more succulent vegetation. Sea lions, seals, marine shorebirds, and tide pool species are abundant in this area. The Kaluna Cliffs area is suspected to be nesting habitat for the peregrine falcon, a threatened wildlife species.

Exclusion of mechanized use along the beach will lessen the possibility of contact between humans and terrestrial, as well as marine, animals, thereby protecting these species from disturbance or destruction.

d. Impact on Water

Revegetation of areas of past soil disturbance will decrease sedimentation. Over 1300 acres of cutover lands and slides and 16 miles of abandoned road will be revegetated. Conifers will be planted where feasible.

Prohibition of timber harvesting and road construction will reduce the possibility of future increases in sedimentation. The steep, rugged slopes and shallow unstable soils in this zone ensure that any soil disturbing activities will result in significant increases in sedimentation and bring turbidity levels above those specified in the North Coastal Regional Water Quality Control Plan.

e. Impact on Minerals

Minerals development will be adversely impacted by requirement that only nonmechanized methods be employed in prospecting and exploration.

f. Impact on Archeological Resource

The zone has a high potential for archeological resource values. Several shell mounds have been

found along the coast and it is known that aboriginal populations inhabited the coastal areas, on at least a seasonal basis. Restriction of development and exclusion of mechanized vehicle use will have a significant beneficial impact on those values by ensuring maximum protection until the planned archeological surveys are completed.

3. Zone 3 - Shelter Cove

This zone encompasses approximately 3500 acres. The primary use is residential and the secondary use is recreation.

a. Impact of Human Populations

The establishment of the recreational vehicle area, running from Telegraph Creek to Gitchell Creek, will lead to some conflicts between recreational vehicle use and residential use by the homeowners at Shelter Cove. Under present uncontrolled conditions, vehicle use along Shelter Cove's roads has resulted in complaints about speeding and excessive noise. Speeding on residential streets, in particular, poses a serious safety hazard. Establishment of the recreation vehicle use area will legitimize this use and maintain the potential for conflicts between recreationists and homeowners.

b. Impact on Recreation

Acquisition of public rights-of-way to the beach in this zone, establishment of areas for mechanized vehicle use, nonvehicle use, ocean fishing and observation, and development of parking areas at Black Sand Beach and Point Delgada will make significant areas of beachfront available for recreational use.

c. Impact on Air Quality

Motor vehicle traffic is heavier in this zone than in any other area of King Range. However, traffic is still very low and climatic conditions are such that the impacts of the planned actions on air quality are insignificant.

d. Impact on Soils and Vegetation

Road construction and land clearing activities in this zone have resulted in serious erosion problems in the past. Regulation of development in this zone is the responsibility of state and local governmental bodies. The Management Program will have no impact on erosion from construction activities. The recreational facilities development planned (parking areas at Point Delgada and Black Sand Beach) will not have a significant impact of soil erosion, because construction will take place on the relatively stable soils on the level area above the beach. Recreation vehicles will utilize existing paved roads within the zone and the sandy beaches which, although unstable, are primarily modified by natural forces.

Clearing of the parking areas will have a negligible effect on the grasslands within this zone.

e. Impact on Water

The ocean waters have been designated as an Area of Special Biological Significant (ASBS), a designation that greatly restricts discharges into these waters. The Shelter Cove subdivision presently discharges effluent into the ocean, after secondary sewage treatment. The ASBS designation may require installation of more advanced treatment facilities, but this determination is a responsibilty of the North Coast Regional Water Quality Control Board. The plan will have no effect upon this situation. Design of planned sanitation facilities in this zone, at the recreational use areas, will be constrained by the ASBS designation. The impact on water quality of these facilities will be negligible.

4. Zone 4 - Point No Pass

This zone covers over 3400 acres. The primary use is primitive recreation and the secondary use is watershed protection.

a. Impact on Recreation

The primary use designation of this zone is consistent with the primitive, relatively undisturbed character of the landscape. The Management Program, by precluding development, will help preserve this character.

b. Impact on Water

Slopes in this zone are extremely steep and slumps and slides are common. Streams in this zone plunge directly into the ocean, often within one mile of their source. Management of this zone as a primitive area will exclude uses which have a potential for increasing sedimentation.

Recreation use of this zone could potentially result in an increase in water pollution. It is doubtful that recreational use would ever be heavy enough to have a significant effect on water quality.

c. Impact on Soils and Vegetation

This zone includes a relatively large proportion of unclassified soils. Most of these soils are found along the shore, where steep slopes plunge directly into the ocean. These soils are primarily colluvium, talus and rock outcrops. The management of this zone, by eliminating surface-disturbing uses, will restrict erosion to that resulting from natural transport of materials.

d. Impact on Animals

Animal populations in this area will fluctuate in relation to the condition of their habitat. Deer populations should remain stable, since the planned management of this zone essentially coincides with present management. The steep, rocky terrain limits man's activities and the present, essentially primitive character of the area attests to this fact. Because of the stong preference of the mountain lion for areas remote from human presence, the area should meet the habitat requirements of this species.

e. Impact on Human Populations

Roughly 50 people reside in the portion of the Whale Gulch area that is within the KRNCA boundary. Most of these people follow alternative life styles. Management of the adjacent Point No Pass area as primitive should be in harmony with the attitudes and expections of the residents of Whale Gulch.

f. Impact on Minerals

Mineral exploration and development will be severely curtailed. Prospecting and exploration will be limited to nonmechanized equipment. No prospecting will be allowd, if significant environmental impacts are discovered, unless a separate environmental impact statement is prepared.

5. Zone 5 - Whale Gulch

This zone contains almost 1300 acres. The primary use is residential. Recreation is the secondary use.

Lands in federal ownership, in this zone, occupy 160 acres, or 13% of the total area in the zone. No actions are proposed in the zone, except possible future acquisition of lands along the Zone 4 boundary to allow expansion of the Point No Pass primitive area. The zone designation and proposed action will have no significant environmental impacts.

6. Zone 6 - Bear Creek

This zone, on the eastside of the King Range, includes about 12,000 acres. Intensive forest management is the primary use. Watershed, wildlife fisheries, recreation, minerals and wildlife are secondary uses.

a. Impact on Soils and Vegetation

Construction of 25 miles of road in this zone will inevitably result in some increase in erosion and sedimentation, as will logging of 1.9 million board feet annually (in Zones 6 and 7). The sediment increase will be temporary. While proper

design, construction and maintenance of roads will minimize erosion and sedimentation, some increase is unavoidable.

Several actions are planned which will reduce present erosion. Rehabilitation of 658 acres of eroding logging roads and skid trails, stabilization of the Queen Peak Mine, improving drainage on 6 miles of existing road and planting of 440 acres of cutover land, will reduce sedimentation. Man-caused erosion is accountable for 90 percent of stream siltation in parts of this zone.

While the allowable cut is not calculated by zone, the total 1.9 million board foot allowable cut will be taken from this zone during the next 5 years. Most stands in the zone are even-aged Douglas fir indicating an even-aged management system employing clearcutting, although some stands lend themselves to selective logging. The allowable cut is also predicated upon the use of such intensive forest management practices, as commercial and precommercial thinning, fertilization, and use of genetically improved planting stock. Brush conversion, presently not economically justified, would be employed if stumpage values increased. All forest soils will be employed for maximum timber production. The proportion of hardwood species on these sites will be reduced, and the earlier seral stages of plant succession will be bypassed in favor of early dominance by the climax species - Douglas fir.

b. Impact on Water

This zone lies on the Bear Creek drainage, which drains an estimated 55,300 acre feet of runoff into the Mattole River annually. There is essentially no use of this water, either within the KRNCA or outside, in the Mattole Valley. Timber management activities may increase runoff, but the increase will be slight in proportion to present runoff. This increase will have no significant effect upon flood flows.

Recreation vehicle use will be allowed on roads and trails within this zone. Although this use can result in increased sedimentation, there will not be a significant impact in this zone because roads showing evidence of erosion or potential erosion hazard will be closed to vehicle use.

Controlled burning and reseeding are planned as an experiment to improve wildlife habitat on 64 acres in the Bear Creek drainage. This action may for 3 to 4 years increase sedimentation, until vegetation becomes reestablished.

c. Impact on Minerals

This zone includes the existing Queen Peak Manganese Mine. The primary use of the zone is intensive forest production. Mineral development will be allowed, but will be constrained by restrictions necessary to protect the primary use.

d. Impact on Animals

Management in this zone entails replacement of old-growth timber by young trees and associated vegetative species. Animal species, such as black-tailed deer and black bear, that are associated with earlier successional stages of community development will be favored by this action. Woodpeckers and other species whose habitat requirements are tied to the availability of mature timber will be adversely impacted.

Bear Creek provides important spawning and rearing habitat for salmonid species. Increased sedimentation, primarily from logging and road construction, will be detrimental to the habitat of these species. But, because of existing natural and man-caused sedimentation problems, and the natural flushing action of winter rains, the effect of this additional sediment in the stream is expected to be temporary and not of great long term significance. Continuation of recently established water quality monitoring programs will be useful in evaluating the validity of this prediction.

7. Zone 7 - Honeydew Creek

The zone contains over 10,000 acres. The primary use is wildlife, while secondary uses are fisheries, forestry, watershed and recreation.

a. Impact on Wildlife

The zone provides habitat for many wildlife species, including black-tailed deer, black bear, osprey, bald eagles, accipiter hawks, the red-backed tree mouse, and the spotted owl, a potentially threatened species. Mountain lions are suspected to range over the Area.

The Management Program indicates that no timber sales will be planned in this zone for the first 5 years, until a detailed inventory can be completed. If the inventory verifies the presence of these species, particularly the spotted owl, restrictions will be placed on those activities that might detrimentally affect wildlife.

The planned management of this zone will protect wildlife species and their habitat, particularly potential threatened species.

b. Impact on Soils and Vegetation

The zone contains about 9800 acres, classified as a Douglas fir climax type, of which 1400 acres will be reserved from cutting for at least 5 years, and perhaps indefinitely if their suspected value for wildlife is confirmed. Much of the old-growth timber on private lands in this zone was logged off in the 1960's and 1970's. Reforestation of 274 acres of this land is planned. An additional 80 acres of brush conversion and tree planting is planned. The impact of these actions will be to place lands, that are presently occupied by chaparral and hardwoods, into a timber-producing capacity.

c. Impact on Water

The Honeydew Creek drainage heads at King Peak (4087') and rapidly drops over 5 miles to its confluence with the Mattole River (elev. 350'). Due to the steepness of the watershed, streamflow is flashy - high peaks of short duration occurring shortly after precipitation ceases.

Although there is a potential for concentration of runoff and flooding, the planned actions will not have a significant impact on these parameters. Fourteen percent of the timbered lands will be reserved from cutting, to protect wildlife species. This area lies in the headwaters of Honeydew Creek, in the areas where runoff is concentrated from several tributary streams.

Skid trails and logging roads found throughout the area have increased runoff and sedimentation. Soil slips have occurred at road cuts and gullies have formed in skid trails. Watershed stabilization of 535 acres and improvement of drainage on 16 miles of existing roads will decrease sedimentation in this zone.

Recreation vehicle use will be allowed on roads and trails within this zone. This may contribute to sedimentation of the streams, particularly from use of skid trails. Evidence of erosion or potential erosion hazard will result in road closure.

IV. MITIGATING MEASURES INCLUDED IN THE PROPOSED ACTION

The King Range Management Program is designed to provide lands and resources to the public for use under a program of multiple use and sustained yield. To a great extent, the actions included in this plan are designed to correct adverse environmental impacts that are a result of past actions.

Stream clearance and rehabilitation projects will be carried out during periods of low stream flow and heavy equipment will not be utilized in stream clearance. These provisions will reduce potential stream sedimentation.

By following Bureau standards on road location, design and construction, erosion and sediment production from road construction can be reduced. End hauling of waste material will be required on steep side slopes. Cutbanks and fill areas will be seeded.

In areas where intensive timber management is planned (Zones 6 and 7), several measures will be taken to mitigate environmental impacts. Tractor logging will be confined to slopes under 40 percent. Suspension or aerial logging systems will be used on steep slopes with erodible soils. Streamside buffer strips will be left along all streams in the area.

Several options could be taken to mitigate the effect of increased recreation use: An evaluation will be completed during the first 5 years of the plan to determine the need for, and feasibility of, these measures.

A permit system could be established, limiting the number of recreationists in the area at any one time to a predetermined capacity. Under this system, users would obtain permits at the Thorn Junction or Honeydew Visitor Centers before entering the area. Enforcement of the permit requirements would require increased patrolling of the area.

One of the undesirable features of the permit system is that people must travel many miles to the area before finding out whether permits are available. Establishment of a reservation system would alleviate this problem. Increased manpower for patrolling would still be required.

An additional proposal would eliminate parking facilities in the area, establish a central parking area, and run shuttlebus service to trailheads. While this action would not limit the total number of users, it would give some measure of control to the dispersion of recreation users throughout the area.

Establishment of a visitor information system and an interpretive program will increase the using public's appreciation of the unique values of the area. This will lessen the magnitude of litter and vandalism problems. Establishment of cooperative cleanup programs with civic and conservation groups has been effective in other areas in reducing litter and maintaining aesthetic values.

Building a fenced enclosure around the Roosevelt elk introduction area at Big Flat will lessen the possibility of conflict between elk and livestock grazing.

Emphasizing preservation of archeological resources, threatened by development projects, over salvage will result in maximum retention of the archeological resource base.

The increased cost of fire suppression on national resource lands will be borne by the BLM through its existing agreement with the California Division of Forestry.

Erosion resulting from road construction will be reduced or eliminated by installation of cross drains, downspouts, energy dissipators, sediment ponds for live streams, crowns, slope seeding and elimination of side casting. Road maintenance will install these sediment reducing features on existing roads as needed and will be aimed at retention of their effectiveness.

V. ADVERSE IMPACTS THAT CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

The Management Program results in restriction on, or prohibition of, such uses as mineral extraction, overland vehicle travel, and maximum development of forest and rangeland resources in particular zones within the KRNCA. It is clear that despite mitigating factors, a reduction in the potential spectrum and volume of uses will occur in the Area taken as a whole. There is little reason to believe that demand for most of these uses will decrease; rather it will tend to be focused on other lands, with possible corresponding impacts on their environmental integrity. Designation as a National Conservation Area is to some degree a means of transferring impact.

- Recreation vehicle use will be excluded in Zones 2 and 4 and the southern portion of Zone 3.

- To implement the Management Program, it is necessary to identify primary uses on specific areas and compromise the full production capacity of resource uses. The exclusion of timber harvest in Zones 2 and 4 will unavoidably have an adverse impact upon income and employment, since this timber resource is removed from the Area's production base. Timber harvest will be temporarily deferred in Zone 7. These restrictions and those needed for establishment of streamside buffer strips result in a decrease in the allowable cut in the area from a potential 8.8 million board feet to 2.4 million board feet on national resource lands and private lands (1.9 million board feet, if national resource lands only are considered).

- Mineral extraction will be limited severely. In the KRNCA, mining activities will be restricted. In the context of overall mineral supply, mining restrictions in the Area will have a relatively minor impact. There is no extraction of minerals from the Area at present. Extraction of minerals from the only known deposits, the Queen Peak Mine, is compatible with the Management Program. Future exploration and development of presently unknown deposits would be limited.

Logging and road construction needed for sustained yield production of timber and to provide recreation access will cause unavoidable adverse impacts in Zones 6 and 7, primarily short-term (3 to 4 year) increases in soil erosion.

Some soil erosion will occur, even with careful planning, layout, design, and construction, resulting in a temporary increase in sedimentation. The quantity or duration of this impact cannot be assessed at this time. Variables that are presently unknown, include: specific location and design of access roads in a particular drainage, the percentage of land in a watershed that will be subjected to surface-disturbing activities during a given time period, and the relationship of the channels and runoff accumulation area. Mitigating measures will reduce the length of time that bare soil is exposed and will minimize runoff concentrations. Some impacts, however, will remain.

Establishment of a National Conservation area will result in an estimated increase of 100 percent in public use during the first five years. Increased development will be necessary to accommodate this increased use, causing unavoidable adverse impacts on natural systems. Zoning for primary use limits both the manager and the public in thier uses of the Area and the location of developments and facilities. Such zoning is essential to protection of the Area's scenic qualities and natural resources such as wildlife, vegetation and archeological values. Those who would prefer more intensive use of the Area will be adversely and unavoidably impacted.

Wildlife species, both terrestrial and marine (e.g. blacktailed deer, stellar and California sea lions, dependant upon habitat along the coastal margin will be unavoidably impacted. The present mood of isolation along the beaches will be reduced.

VI. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Short-term uses that would occur under the proposed Management Program are intended to maintain indefinitely the sustained yield productivity of the KRNCA and the quality of its natural resources. Maintenance of natural populations and the integrity of natural processes over the long-term is a major objective of the proposed management of the Area. Likewise, the Management Program's intent is to provide those uses of the Area, which can take place without progressive deterioration of natural resources.

The proposed action, by recognizing multiple use through designated primary use zones, limits exploitation of natural resources on a short-term basis, but provides assurance of their continued availability for future generations.

The Management Program is predicated upon the premise that land located within the various primary use zones will either be acquired by the Federal Government or be managed by private individuals in such a way as to be compatible with the primary use in the zone. The natural resources of the Area will then be managed on the basis of maintaining long-term productivity.

Management of timber resources provides a good example of the effect of the Management Program in maintaining long-term productivity. Private landowners of small tracts will normally manage their properties to maximize timber production at times when prices are high and minimize reinvestment in practices, such as reforestation, which do little to increase short-term profitability. When these lands are included in a program weighted toward maintenance of long-term productivity, the entire productive capacity of the area is managed for sustained yield and there is much less fluctuation to reflect short-term changes in product markets. There is greater reinvestment in reforestation, and other intensive forestry practices, because the area's management objectives reflect a longer time horizon. Thus, while short-term use production will be reduced, the objective of maintaining long-term productivity and a stable flow of material to dependent industries will be enhanced.

VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementation of the Management Program commits land and resources to uses according to primary use zones, but this commitment is tentative rather than irreversible. The King Range Act provides that the plan will be reviewed and re-evaluated periodically. Therefore, the Management Program is not a fixed, final commitment of resources, but rather a working plan that must be reviewed and changed as warranted by changing needs and conditions. The attached King Range Management Program document includes a more detailed discussion of the mechanisms established for change and modification.

The expenditure of funds to implement some features of the plan represents an irretrievable commitment of resources. These features include recreation facility development, wildlife and fisheries habitat improvement, and watershed stabilization practices on chaparral sites. Other expenditures, such as reforestation, represent capital investments in the area and will be captured at the time the increased timber is marketed.

The projected increase in visitation may, despite mitigation built into the Management Program, result in destruction of archaeological sites, particularly those sites that are presently unknown.

Increased visitor use may increase the potential for actual destruction of threatened wildlife species or disruption of their life cycles. Three threatened species - the southern bald eagle, peregrine falcon and the brown pelican are found in the area.

The cost of road improvements to county roads necessitated by increased KRNCA recreation traffic will be borne by the county government.

There may be some increase in cost to the California Division of Forestry due to the increased risk of man-caused fires. The costs of increased suppression incurred on private land in the KRNCA will not be reimbursed by the BLM and will, therefore, be net increased costs to the CDF.

VIII. ALTERNATIVES TO THE PROPOSED ACTION

A number of alternative courses of action have been considered concerning the future of the King Range. Generally, these alternatives fall into three categories: (A) no action, (B) alternative land management philosophies, and (C) alternative levels of implementation of the proposed Management Program.

A. No Action

One alternative is to take no action on any of the elements of the proposed Management Program. The KRNCA would not be designated, nor would the elements of the proposed plan and program be implemented. Since this alternative would not meet the Congressional mandate of P.L. 91-476, it would require legislative action.

Development of the Shelter Cove subdivision would continue. The current rate of construction is about five homes annually, but the developer predicts that construction starts will increase to 60-80 per year. This will result in increased soil erosion, increased need for community services and increased use of the remainder of the area by humans.

Subdivision of other private lands is probable. Landowners have been approached in the past by developers and some lands would probably be ripe for subdivision if economic conditions were favorable. Subdivision entails a considerable amount of road construction and site leveling. These actions cause loss of soil, increases in stream sedimentation, decrease in moisture retention capacity, destruction of vegetation and consequently a reduction in wildlife habitat.

Mineral development is not anticipated unless supply shortages develop that would lead to a resumption of the manganese stockpiling program.

Logging of timber on private lands would probably continue, as regulated by the California Forest Practices Act. Inventories reveal that over 99 MMBF of timber would be available for harvest on almost 17,000 acres of private land within the KRNCA boundaries.

Livestock grazing would continue, primarily along the coast in the northwestern portion of the KRNCA. Over 3,000 AUM's of forage could be utilized.

TABLE III - SUMMARY OF USE CHANGES IN FIRST FIVE YEARS AFTER THE PLAN IS IMPLEMENTED

(Based on all lands in the KRNCA - Federal & Private)

		After Five Years	
	Present Level	No Action Alternative	With the Plan (Full level-$5,840,00
Annual Recreation Visits to KRNCA (Visitor Use Days)	56,400	72,300	140,000
Residences: In Shelter Cove	40	65	65
Outside of Shelter Cove	18	25	20
Annual Timber Harvest (Million board feet Int.1/8" rule)	0	1.6	2.4
Watershed rehabilitation and erosion control projects:			
Acres of Land Treated	0	0*	12,251
Miles of Road Treated	0	0*	43
Domestic livestock forage utilized (animal unit months)	1,300	1,300	1,274
Mineral Production	0	0	0
Streams improved for anadromous fish (miles)	0	0	34
Wildlife observation/hunting access improvements (miles):			
Access Roads	0	0	3½
Four-Wheel Drive Roads	0	0	6
Brush and Trail Openings	0	0	17
Known raptor nest sites protected (number of sites)	0	0	2
Areas of potential raptor cliff habitat protected from additional intrusive development for a radius of 1½ miles.	3	3	4

* Most of the land in need of rehabilitation is in private ownership, and no rehabilatation by these owners is expected.

TABLE III (Cont.) - SUMMARY OF USE CHANGES IN FIRST FIVE YEARS AFTER THE PLAN IS IMPLEMENTED
(Based on all lands in the KRNCA - Federal & Private)

		After Five Years	
	Present Level	No Action Alt.	Alt. Funding Level 2 ($1,000,000)
Annual Recreation Visits to KRNCA (Visitor Use Days)	56,400	72,300	90,800
Residences: In Shelter Cove	40	65	65
Outside of Shelter Cove	18	25	20
Annual Timber Harvest (Million board feet Int.1/8" rule)	0	1.6	1.6
Watershed rehabilitation and erosion control projects:			
Acres of Land Treated	0	0*	0
Miles of Road Treated	0	0*	0
Domestic livestock forage utilized (animal unit months)	1,300	1,300	1,300
Mineral Production	0	0	0
Streams improved for anadromous fish (miles)	0	0	0
Wildlife observation/hunting access improvements (miles)			
Access Roads	0	0	0
Four-Wheel Drive Roads	0	0	0
Brush and Trail Openings	0	0	0
Known raptor nest sites protected (number of sites)	0	0	2
Areas of potential raptor cliff habitat protected from additional intrusive development for a radius of 1½ miles.	3	3	4

* Most of the land in need of rehabilitation is in private ownership, and no rehabilitation by these owners is expected.

TABLE III(cont.) - SUMMARY OF USE CHANGES IN FIRST FIVE YEARS AFTER THE PLAN IS IMPLEMENTED
(Based on all lands in the KRNCA - Federal & Private)

		After Five Years	
	Present Level	No Action Alt.	Alt. Funding Level 1 ($3,000,000)
Annual Recreation Visits to KRNCA (Visitor Use Days)	56,400	72,300	90,800
Residences: In Shelter Cove	40	65	65
Outside of Shelter Cove	18	25	20
Annual Timber Harvest (Million board feet Int.1/8 " Int.)	0	1.6	1.6
Watershed rehabilitation and erosion control projects:			
Acres of Land Treated	0	0*	6,070
Miles of Road Treated	0	0*	21
Domestic livestock forage utilized (animal unit months)	1,300	1,300	1,300
Mineral Production	0	0	0
Streams improved for anadromous fish (miles)	0	0	12
Wildlife observation/hunting access improvements (miles):			
Access Roads	0	0	2
Four-Wheel Drive Roads	0	0	4
Brush and Trail Openings	0	0	6
Known raptor nest sites protected (number of sites)	0	0	2
Areas of potential raptor cliff habitat protected from additional intrusive development for a radius of 1½ miles.	3	3	4

* Most of the land in need of rehabilitation is in private ownership, and no rehabilitation by these owners is expected.

Watershed conditions should continue to be stable on approximatley one-half the Area. On the remaining half continued erosion can be anticipated. If increased road construction, logging, grazing, and site leveling occur as is projected above, large scale increases in erosion are probable.

Blacktailed deer habitat will continue to decline as vegetation proceeds to develop toward climax. As this occurs, populations can also be expected to decline.

Increased logging and road construction will increase stream sediment loading and decrease available salmonid spawning and rearing habitat.

Recreation use will increase at an annual rate of approximately five percent. This could result in increased wildfire risk, possible sanitation problems, and probable conflict between recreation vehicle users and recreationists desiring a primitive experience. There will be no increase in recreation facilities and the increased recreation use will be essentially unmanaged.

Federal lands within the Area will receive nearly the same intensity of resource utilization and protection as in the proposed action. However, private lands would primarily remain in private ownership and the short-term use would be much more intense. The cumulative effect of vegetative change through timber harvest, burning and road construction will disrupt many wildlife species. Especially vulnerable are those species that cannot tolerate close relationship to man, such as eagles and bears. Archeological sites will be excavated and many historic items could be destroyed.

B. Alternative Land Management Philosophies

The proposed Management Program is directed toward achievement of multiple use and sustained yield objectives, in accordance with legislative direction in P.L. 91-476.

An almost infinite variety of other alternative resource mixes is possible. The two discussed below set the outer limits for consideration of possible alternative combinations of resource uses. Since it is debatable whether either alternative fully meets the intent of P.L. 91-476, legislative action would probably be needed prior to adoption of either alternative.

1. Full Preservation of Environmental Quality

This alternative entails very limited utilization of the Area's marketable resources. Acquisition of private lands would proceed as rapidly as possible. Timber harvest would essentially be excluded. Grazing would be reduced to a level much below current use. Wildlife habitat improvement projects and stream clearance would be limited to those areas where physical access is presently available. No new recreational facilities would be developed, except possibly some primitive hiker-oriented facilities along trails and beaches. Off-road vehicle use would not be allowed. Mineral exploration would be discouraged. No new road construction would be allowed and many of the existing roads and four-wheel drive trails would be closed and revegetated.

Impacts: To preserve environmental quality, the Bureau would designate the entire area with recreation as the primary use. The utilization of other resources would necessarily be very minimal, since one of the recognized values of the Area is its remote, back country character. Development of any type could detract from this primary recreation value. No additional roads would be built; several in existence would be closed and revegetated. Vehicles would not be allowed off roads or along beaches. Existing campgrounds would be left as currently developed, trails would be kept nearly as they now exist. Timber harvest would not be allowed since cutover areas do detract from aesthetics on a short-term basis. Grazing would be greatly curtailed. No projects would be allowed to convert brush to grass for improving grazing, wildlife habitat or watershed. Revegetation would be initiated on all cutover or cleared areas.

All actions would be directed toward mitigating the current environmental disruptions on both the present private owerships and national resource lands. Ecological relationships and human interest values, such as archeological and historic sites, would receive maximum protection.

Economic effects and impacts upon the Area's infrastructure could be greater, at least in the short-term, than any other alternative. While the loss cannot be quantified, some decrease in employment would be probable. The adverse impacts on local employment and the area's economy could be significant if the resources were not utilized.

2. Maximum Utilization of Resources

This alternative is based upon short-term maximization of resource use. In some cases, long-term ecosystem productivity would be lessened. Timber would be harvested on all timber producing sites. At least 25,000 acres have a potential for intensive timber management, including extensive clearcutting, vegetative conversion, reforestation, fertilization, and construction of a high standard road system. Grazing use would be increased by converting brush sites to grass and development of extensive cross-fencing. Several additional campgrounds would be developed with surfaced access roads and parking facilities. Off-road vehicle areas would be developed along ridge trails as well as portions of the beaches. Streams would be cleared of log jams and road access would be provided for fishermen. Type conversion for improvement of wildlife habitat and development of a high-density network of access roads and four-wheel drive trails would improve hunter success. Mineral exploration would be encouraged in all areas.

Impact: Timber harvest maximization on 25,000 acres would have some significant impacts on the environment. Many areas included in this acreage are extremely steep (over 80% slope) and have relatively shallow soils which are highly erodible. Also many of the areas are clearly visible from roads, trails and beaches. Some virgin stands harbor spotted owls and other animals that would be displaced or killed if the timber is harvested. Intensive forest management would require at least 20 miles of additional road construction plus improvement of 30-40 miles of existing road in various states of disrepair.

Conversion of brush to grass to improve grazing and increase water yield would disrupt the habitat of many animals, cause large openings that would extend beyond the reach of animals requiring edge effect and leave large areas (several 100 acres) of solid, unbroken grass fields. Fences would be aesthetically displeasing, contrasting with the natural appearance of the Area.

Campgrounds with large surfaced parking lots, trailer turn-arounds and sewage disposal facilities would require removal of much vegetation, thus taking away much of the natural beauty around the now primitive campgrounds.

Off-road vehicles utilizing the old logging roads, trails and many grassy slopes could cause noise pollution, air pollution, accelerated soil erosion and hazards to hikers. Wildlife, such as eagles and ospreys, would be harassed to the point of abandoning the Area.

Stream clearing and wildlife habitat projects will cause increased sediment in streams for a short period, but should not have extended effects, except for visual changes.

Mineral exploration will require additional excavation construction of roads, will increase stream sediment loads, and have an additional impact on aesthetic quality.

C. Alternative Levels of Implementation of the Proposed Management Program

In addition to the no action alternative, and alternatives directed at differing mixes of resource objectives, there are numerous alternatives which are directed at different levels of implementation of the proposed Management Program. Two alternative levels of implementation were explicitly considered: (1) assuming a $1 million budget, and (2) assuming a budget level of $3 million.

1. Implementation - Assuming a Budget Level of $1,000,000

This alternative would implement P.L. 91-476 with the same boundaries, zone designation, and land acquisition program as the proposed action. It differs from the proposed action in that it would involve no resource protection or development projects, or recreation or other nontimber sale road construction, and no permanent visitor contact site construction. It would provide for harvest of 1.6 million board feet of timber per year. The full fire protection program would be carried out.

Impacts: Visitor use would increase at about one-half the rate anticipated under the proposed Management Program, or about 10 percent annually. There would be continually increasing congestion and litter accumulation, particularly on those beaches that are accessible to vehicles in the northern part of the Area. Disturbance of wildlife would occur. No visitor management program would be initiated, but the fire protection program would result in improved communications for search and rescue operations.

IX. CONSULTATION AND COORDINATION WITH OTHERS

A. Consultation and Coordination in the Development of the Proposal and in the Preparation of the Draft Environmental Statement

Numerous agencies, groups, and individuals were involved in the development of the proposed Management Program and the draft environmental statement. Before planning was initiated, two advisory committees were established. One committee was composed of members of local communities which represented a number of varying interests. The other committee included representatives of federal and state public agencies and local governments. A total of eight meetings was held with these committees during various stages of plan development. In addition, the Bureau maintained close coordination with other state and local regulatory or planning agencies not represented on the committees.

Five public meetings were held in the local area in April and May of 1973, during the early plan formulation phase of the general plan. At these meetings, initial Bureau management recommendations were presented and comments and recommendations were solicited from the general public. Additional public meetings were held in the local area in October of 1973 to present the final planning recommendations for management and to receive any additional comments.

After development of the detailed implementation program for the general land use plan, a summary report and an environmental assessment were distributed to governmental agencies and the public during March 1974. A final review meeting was held for Federal and State agencies in Sacramento on April 4, 1974. A public hearing was then held on April 6, 1974, near the King Range area in Redway, California. The plan was presented and, after a question and answer session, written and oral testimony was solicited.

During April 1974 the Management Program and the Environmental Assessment were distributed to the Office of the Secretary of the Interior and other Interior agencies.

B. Coordination During Review of the Draft Environmental Statement

1. Distribution and request for comments.

The draft environmental statement was filed with CEQ on May 31, 1974, and a public notice of availability of the draft statement was published in the Federal Register on June 6, 1974. The draft statement was initially distributed to, and comments were requested from, the following Federal, State, and local agencies and jurisdictions; conservation and user organizations; and individuals.

Federal Agencies

Department of Agriculture
  Forest Service
  Soil Conservation Service

Department of the Army
  Corps of Engineers

Department of Commerce
  National Oceanic and Atmospheric Administration

Environmental Protection Agency

Department of the Interior
  Fish and Wildlife Service
  Bureau of Mines
  Bureau of Outdoor Recreation
  Bureau of Reclamation
  Geological Survey
  National Park Service

State Agencies

Office of Planning and Research, Office of the Governor (State Clearinghouse)
Coastal Zone Conservation Commission

Regional and Local

North Coast Region, Water Quality Control Board
Humboldt County Air Pollution Control District
Mendocino County Air Pollution Control District
North Coast Regional Coastal Zone Conservation Comm.
Humboldt Bay Harbor, Recreation and Conservation Dist.
Humboldt Resort District No. 1
Mendocino County Board of Supervisors
Humboldt County Board of Supervisors

Organizations and Individuals

Far West Motorcycle Club
Mendocino County Four-Wheel Drive Patrol
Western Rockhound Association, Inc.
California Association of Four-Wheel Drive Clubs, Inc.
Redwood Empire Four-Wheel Drive Club
Redwood Region Audubon Society
Humboldt Wildlife Conservation Club
Redwood Chapter, Sierra Club
Redwood Buggy Association
Boot and Blister Club
Dr. Ed Schwartzman
Mr. Steven P. Steinhour
Mr. Leonard Blomquist
Dr. David P. Stevenson
Mr. Kay Roscoe
Mr. Robert McKee
Dr. Donald W. Hedrick
Mr. William Brown
Mr. Mal Coombs
Dr. William Devall

Public requests resulted in distribution of an additional 110 copies during the review period. A distribution list is on file and available for public inspection in the California State Office, Bureau of Land Management, 2800 Cottage Way, Sacramento, California.

2. Written comments received.

Written comments were received from nine Federal, State, and local agencies. Copies of these comments are included in paragraph 4.

All comments were analyzed to determine necessary revisions and improvements upon the draft statement. The response to specific comments is included below, in paragraph 3.

3. Analysis of comments received on draft environmental statement.

Federal Agencies

a. United States Department of Agriculture, Soil Conservation Service, Davis, California

The SCS indicated that the draft environmental statement gave adequate consideration to those elements that fall within their areas of responsibility or special expertise.

b. Department of the Army, Corps of Engineers, South Pacific Division, San Francisco

The reply stated that the proposed plan will not conflict with existing or authorized projects of the Corps of Engineers. The Corps had no comments.

c. United States Department of the Interior, Bureau of Outdoor Recreation, Pacific Southwest Regional Office, San Francisco

The BOR noted that several of their suggestions on the earlier, preliminary environmental assessment had been followed in preparing the draft environmental statement. The Bureau had no additional comments on the draft statement.

d. United States Department of the Interior, Bureau of Reclamation, Washington, D.C. 20240

The Bureau of Reclamation suggested that log jams resulting from natural conditions be allowed to remain in the primitive areas.

Response: No stream clearance projects are planned in the primitive area (Zone 4). Clearance of log jams in Zone 2 is planned only on Horse Mountain and Gitchell Creeks. Any naturally occurring log jams will be left in the remaining 7 streams in the zone.

e. United States Department of the Interior, National Park Service, Western Region, San Francisco, California

(1) The National Park Service recommended that a more detailed set of guidelines and procedures to protect archaeological resources be developed and included as an appendix to the final statement.

Response: The planned archaeological studies will include development of guidelines, priorities and criteria for protection and preservation of archaeological values. Individual projects will entail preparation of environmental analyses, which analyze the impact of the proposal on cultural values and propose alternatives and mitigation measures to minimize these impacts.

(2) The NPS states that the known and recorded sites in the KRNCA should be described and evaluated for their National Register Potential.

Response: Evaluation of sites for potential listing on the National Register is one of the primary purposes of the archaeological studies proposed in the program. Implementation of the management program will provide sufficient funds to acquire the necessary archaeological expertise to apply the National Register criteria (36 CFR 800.10)

(3) The NPS feels that there should be a definite commitment to have an archaeological survey of the proposed 37 miles of new road construction and the 49 miles of new trails.

Response: All proposed projects in the KRNCA will be subject to an environmental analysis, prepared under the guidelines contained in Bureau of Land Management Manual 1791. Consideration of the impact on cultural resources is an integral part of the environmental analysis. Determination of specific methods to be employed in assessing impacts on archaeological values will be made following completion of the archaeological studies, proposed in the management program.

(4) The NPS recommends that the proposed archaeological studies include surveys and that priority, in cases where possible disturbance may occur, be given to stabilization over salvage.

Response: We concur. Clarifying language has been inserted in the final environmental statement.

(5) The NPS recommends that mitigation measures be designed to preserve the maximum amount of archaeological information, and therefore preservation of archaeological values should be given priority over salvage.

Response: We concur. The discussion of mitigating measures has been revised to emphasize the priority placed on preservation.

f. Environmental Protection Agency, San Francisco California

(1) EPA feels that more detailed discussion of mitigating actions that are planned in connection with road construction and continuing road maintenance is needed.

Response: The proposed program represents a general level of planning. Road and trail construction estimates are based on an analysis of resource management needs. Mitigation methods to be employed in construction of a specific road or trail will be determined during the actual survey and design of the construction project, based upon an environmental analysis of the project.

(2) EPA recommended an expanded discussion of the disposition of sediment in Zones 6 and 7 and the effect of this sediment on anadromous fisheries.

Response: The discussion of environmental impacts has been revised to more clearly show the estimated effect of increased sedimentation in Honeydew and Bear Creeks and the effect upon anadromous fisheries.

(3) EPA suggested that the proposed program for removal of log jams should be assessed very carefully, since removal may change the hydrologic characteristics of the streams.

Response: The environmental impacts of stream clearance will be assessed in individual invironmental analyses, as each project comes under consideration. The stream clearance projects are proposed to remove debris resulting from past logging operations. While stream clearance will result in changes in stream hydrology from present conditions, it actually involves restoration of the natural stream channel characteristics.

(4) EPA suggested that use of chemical erbicides be coordinated between the Bureau and EPA.

Response: The actual methods to be employed in brush conversion will be determined after completion of an environmental analysis of the specific project. Bureau employment of herbicides will be in accordance with the Department of the Interior's guidelines for employment of pesticides. These guidelines provide for review of all proposals by an intradepartmental committee, and establish restrictions and prohibitions on use of particular pecticides.

(5) EPA suggested inclusion of the National Ambient Air Quality Standards.

Response: The National Air Quality Standards are now listed in the final environmental statement.

g. State of California, Resources Agency

The State comments were based on their review of a somewhat earlier draft that was prepared in a slightly different format.
(1) The State suggested several revisions of the draft mining regulations. Their comments are addressed to the earlier version of the draft, which required notification of the authorized officer prior to commencement of operations. Two specific language changes were suggested.

(a) that descriptions of environmental impact be required only when the District Manager determines that an activity will have a significant effect upon the environment.

(b) The environmental impact information, specified in the regulations should not be required for each activity upon the same deposit.

Response: The draft regulations now call for submission of an operating plan.

(a) The purpose for requiring submission of information on the environmental impact of a proposal is to assist the District Manager in preparing the environmental analysis and determining whether significant environmental impacts are likely to result from the proposed action. No purpose would be served by requiring this information after the determination has been made.

(b) The draft regulations now provide for submission of supplemental operating plans on changes in proposed operations.

(2) It was suggested that the draft regulations be revised to provide for exceptions in the case of development of strategic minerals in times of national emergency.

Response: The Bureau is bound by the provisions of the National Environmental Policy Act and implementing instructions of the President, the Council on Environmental Quality, and the Department of the Interior. In any case, mining of the Bear Creek claims is a compatible use, as determined in the King Range Management Program.

(3) It was suggested that rehabilitation of the Bear Creek claims should be compatible with future possible mining activities.

Response: We concur. Any rehabilitation measures undertaken will be accomplished cooperatively with the owners of the Bear Creek claims.

(4) The State recommended that changes be made in the Management Program to provide alternative procedures for allowing use of mechanized fire fighting equipment in Zones 2 and 4.

Response: We agree that strong coordination will be needed. Development of alternate procedures

and criteria for determination of extreme emergencies is appropriately a subject for consideration in the local annual operating plans, provided for in the Statewide BLM-CDF agreement.

(5) The State suggested that the statement address the increased fire risk due to increased public use and provide for a comprehensive fire prevention program.

Response: Additional information on the impact of the program on fire risk and hazard is included in the statement. The fire prevention program will be revised as the program becomes operational and additional needs become apparent.

(6) The state recommended that the plan be flexible enough to allow for utilization of some of the timber, if practices develop that allow timber utilization in a way that is compatible with the plan.

Response: Bureau of Land Management policy on management of primitive areas precludes commercial timber harvest.

(7) The State indicated that the ocean waters adjacent to King Range had been designated an Area of Special Biological Significance (ASBS) on March 21, 1974.

Response: The Bureau is prepared to work cooperatively with the North Coast Regional Board to meet the objectives of the ASBS designation.

h. Humboldt County, Air Pollution Control District, Eureka, California

(1) The APCD suggested discussion of the short-term degradation of air quality, resulting from forest slash and debris burning and dust.

Response: We concur. These impacts are discussed in the final environmental statement. (page 103)

(2) The APCD suggested inclusion of federal air quality standards in the environmental statement.

Response: Federal standards are now listed in the final environmental statement. (page 71) The more restrictive standards will apply.

i. Humboldt County, Department of Public Works, Eureka, California

(1) DPW recommended that beneficial aspects of prohibiting recreational vehicle use south of Punta Gorda be listed.

Response: We concur. These impacts are addressed in the final environmental statement. (page 95)

(2) It was recommended that the increased costs of road maintenance be considered in the environmental statement.

Response: The impact of the possible increased need for road maintenance is addressed in the final statement. (page 101)

(3) The DPW suggested that the statement consider impacts on safety and the need for additional protection services from the California Division of Forestry.

Response: The impacts resulting from increased fire occurrence are addressed in the final statements. (page 101)

4. Response to request for comments.

The attached comments were received in response to our distribution of the draft environmental statement and are those addressed above:

United States Department of the Interior
NATIONAL PARK SERVICE
WESTERN REGION
450 GOLDEN GATE AVENUE, BOX 36063
SAN FRANCISCO, CALIFORNIA 94102

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IN REPLY REFER TO:
L7619
(WR)PSE

July 9, 1974

Memorandum

To: State Director, Bureau of Land Management, Sacramento, California

From: Associate Regional Director, Professional Services, Western Region, National Park Service

Subject: Review of draft environmental statement, King Range National Conservation Area, Proposed Management Program (DES 74-66)

We have reviewed the draft statement and are pleased to offer the following comments.

Comments on the Proposal

The proposed action will not affect any known or potential units of the National Park System nor any historical, educational, or natural landmarks.

Comments on the Draft Statement

We are pleased with the attention that is given to archeological resources in the draft statement. We recommend, however, that a more detailed set of guidelines and procedures to protect archeological resources be developed and included as an appendix to the final statement to assure agency compliance with appropriate Federal legislation, particularly title 36 CFR, part 800.

There are several known and recorded archeological sites in the proposed conservation area. In the final statement these sites should be described and evaluated for their National Register potential. If they qualify for nomination to the register, compliance should be made with title 36 CFR, part 800.

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There should be a definite commitment to have the rights-of-way of the proposed 37 miles of new roads and 49 miles of new trails surveyed by a competent professional archeologist. Such projects have, in the past, entailed much destruction of archeological resources, thus obliterating a considerable amount of the non-renewable archeological resource base. If significant archeological resources are identified, they should be described and evaluated for their National Register potential by the archeologist who performed the survey. Decisions concerning the proposed construction should then take into account the significance of any affected resources and professional recommendations concerning them.

Page 30 of the proposed management plan. The archeological values studies to be contracted should include surveys, as well as surface sampling, test excavation and analysis and publication of information. In addition, in the event that cultural sites are endangered by natural forces, visitor use, or development projects, we would recommend that stabilization be given priority over salvage.

Mitigation measures should be designed to preserve the greatest amount of information and material from the archeological resource base. In case sites are found to exist in the development areas, there should be serious consideration given to preservation of such resources as opposed to merely salvage.

This draft statement appears to be very well prepared. We appreciate the opportunity to comment upon it.

Bruce M. Kilgore

Bruce M. Kilgore

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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SAN FRANCISCO, CALIFORNIA 94111

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JUL 19 1974

J. R. Penny, State Director
Bureau of Land Management
2800 Cottage Way E-2841
Sacramento CA 95825

Dear Mr. Penny:

The Environmental Protection Agency has received and reviewed the draft environmental impact statement for the following proposed project, King Range National Conservation Area Proposed Management Program, Humboldt and Mendocino Counties, California.

EPA's comments on the draft statement have been classified as Category LO-2, specifically lack of objections to the proposed action. Definitions of the categories are provided on the enclosure and our comments describing additional information necessary to complete the environmental statement are provided on a second enclosure. The classification and the date of EPA's comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on proposed Federal actions under Section 309 of the Clean Air Act. Our procedure is to categorize our comments on both the environmental consequences of the proposed action and the adequacy of the impact statement at the draft stage.

EPA appreciates the opportunity to comment on this draft statement and requests two copies of the final statement when available.

Sincerely,

L. O'Connell
for Paul De Falco, Jr.
Regional Administrator

Enclosures

cc: Council on Environmental Quality, Wash., D.C. 20460

Environmental Impact of the Action

LO--Lack of Objections

EPA has no objections to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER--Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EU--Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1--Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2--Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3--Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

Figure 3-1. Attachment
Page 2 of 2

COMMENTS ON

KING RANGE NATIONAL CONSERVATION AREA

Water Quality: Given that the existing environment of the King Range area has experienced severe environmental degradation due to past practices of overlogging, overgrazing, and careless road construction combined with high natural erosion rates, the proposed management plan represents a significant and important attempt to restore and enhance environmental quality. In particular, the proposed management plan may result in a major net beneficial impact on water quality - the proposed zones which delineate land-use activities generally recognize the potential for erosion and sedimentation; the provisions for revegetating and stabilizing presently eroding watersheds and restoring timber sites to productive capacity will decrease sediment production and stream damage.

However, certain actions can be viewed as potentially having continuing adverse effects on water quality. Construction of 37 miles of new road and reconstruction of 30 miles of old road through the rugged terrain of the King Range may lead to severe erosion problems. EPA believes that the environmental statement should discuss in considerably more detail the mitigating actions that are planned for both road construction and continuing road maintenance.

In Zones 6 and 7 where both road construction and logging are proposed, the environmental statement should expand the discussion of the disposition of sediment in the Bear Creek and Honeydew Creek drainages. A more explicit discussion of the impact of such sediment on the anadromous fishery is also warranted.

The proposed program for removal and clearing of log jams in the streams should be assessed very carefully. Removal of the log jams may significantly change the hydrologic character of the stream resulting in increased bed and bank cutting.

In areas where brushland conversion is proposed, it is not clear how the clearance will be performed. If the use of chemical herbicides is contemplated, the Bureau should consult with EPA prior to application of any of these materials.

Air Quality: The air quality standards listed on Page 35 are California standards. The National Ambient Air Quality Standards should also be presented.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P. O. Box 1019, Davis, CA 95616

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June 21, 1974

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Mr. J. Russell Penny
State Director
Bureau of Land Management
2800 Cottage Way, E-2841
Sacramento, California 95825

Dear Mr. Penny:

Our review of the "King Range National Conservation Area Proposed Management Program and Draft Environmental Impact Statement" indicates adequate treatment of resource elements falling within the realm of Soil Conservation Service expertise and responsibility. In our opinion anticipated impacts from carrying out the proposed plan have been treated as adequately as the complexity and extensiveness of the area permits.

In the absence of Resource Conservation Districts in Humboldt County, Soil Conservation Service activities have been limited within the area of consideration. Conservation elements of the plan should complement future efforts of the Soil Conservation Service in Humboldt County.

Sincerely,

G. H. Stone

cc: Dwain Campbell, SCS, Santa Rosa
William Beatty, SCS, Ukiah

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF OUTDOOR RECREATION
PACIFIC SOUTHWEST REGIONAL OFFICE
BOX 36062
450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102

IN REPLY REFER TO:

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July 15, 1974

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Memorandum

To: State Director, Bureau of Land Management, Sacramento

From: Regional Director

Subject: King Range NCA Draft Environmental Impact Statement (DES-74/66)

We appreciate the opportunity to review the subject draft environmental impact statement. We note that several of the suggestions in our memorandum of April 17, 1974 commenting upon the environmental assessment were followed. We have no additional comments to those already made.

Our review of the Land and Water Conservation Fund acquisition program will be made in the course of the annual budget cycle.

Frank E Sylvester
Frank E. Sylvester

JOHNNY HORIZON
'76

DEPARTMENT OF DEFENSE · UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, CORPS OF ENGINEERS
630 Sansome Street, Room 1216
San Francisco, California 94111

REPLY TO
ATTENTION OF:

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10 July 1974

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Mr. J. R. Penny
State Director
Bureau of Land Management
2800 Cottage Way, E-2841
Sacramento, California 95825

Dear Mr. Penny:

This is in response to your letter of 31 May 1974 in which you requested Corps of Engineers review and comments on the Draft Environmental Impact Statement for the King Range National Conservation Area Proposed Management Program.

In accordance with our review procedures, this letter shall serve as the consolidated response of the District Engineer, San Francisco, and the Division Engineer, South Pacific.

The proposed plan does not conflict with existing or authorized plans and responsibilities of the Corps of Engineers. We have no comments concerning the Environmental Impact Statement for this proposed action, but appreciate the opportunity to review it.

Sincerely yours,

Robert M Rufsvold

ROBERT M. RUFSVOLD
Colonel, CE
Deputy Division Engineer

March 3, 1849

United States Department of the Interior

BUREAU OF RECLAMATION
WASHINGTON, D.C. 20240

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JUL 19 1974

Mr. J. R. Penny
State Director
Bureau of Land Management
2800 Cottage Way, Room E-2841
Sacramento, California 95825

Dear Mr. Penny:

As requested in your letter of May 31, 1974, the Bureau of Reclamation has reviewed the draft environmental statement (DES 74-66) for the King Range National Conservation Area Proposed Management Program.

The proposed program is well conceived and appears to reconcile the various interests in the King Range National Conservation Area.

Regarding the discussion of log jams, they are known to be barriers to fish migration and most are caused by logging. Some log jams, however, are the result of natural conditions and should be left as a demonstration of natural processes in the primitive areas.

Sincerely yours,

E F Sullivan

Assistant
Commissioner

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DEPARTMENT OF PUBLIC WORKS
COUNTY OF HUMBOLDT
1106 SECOND STREET, EUREKA, CALIFORNIA 9550
PHONE (707) 445-7491

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July 16, 1974

J. R. Penny
State Director
Bureau of Land Management
2800 Cottage Way, E-2841
Sacramento, California 95825

Dear Mr. Penny:

Re: Comments on Draft EIS on King Range Proposed Management Program

Thank you for sending us a copy of Draft EIS and offering us the opportunity to review and comment. Overall, we believe you have done an admirable job on the Draft EIS. Our concerns are expressed in the following comments.

1. Page 60, Section B-1-a, third paragraph. We believe this paragraph should be expanded so as to list the additional environmental and social benefits that result from prohibiting recreational vehicle use south of Punta Gorda. These benefits are: increased quality of recreational experience due to lack of intrusive noise and night-time glare of headlights; increased safety for hikers and especially for campers sleeping on the beach; hikers and campers will not suffer the psychological stress that results from fear of being run over or harmed by ORV's or their owners while camped on an isolated beach.

2. Under the Section IIIA, Area-wide impacts, we believe a section on economic impact should be included and address the potential impact on Humboldt County in regard to the cost of upgrading and maintaining the county roads leading to the King Range Area from Highway 101.

3. A brief discussion should be included under impacts on safety with regard to the increase in fires resulting from an increase in summer tourists using the area. A secondary impact would be the increased services required by the California Division of Forestry.

We will be happy to answer any questions you may have regarding our comments.

Very truly yours,

Donald C. Tuttle

Donald C. Tuttle
Natural Resources Analyst
(707) 445-7741

NORMAN B. LIVERMORE, JR.
SECRETARY

RONALD REAGAN
GOVERNOR OF
CALIFORNIA

OFFICE OF THE SECRETARY
RESOURCES BUILDING
1416 NINTH STREET
95814

Department of Conservation
Department of Fish and Game
Department of Navigation and
Ocean Development
Department of Parks and Recreation
Department of Water Resources

Air Resources Board
Colorado River Board
San Francisco Bay Conservation and
Development Commission
Solid Waste Management Board
State Lands Commission
State Reclamation Board
State Water Resources Control Board
Regional Water Quality Control Boards

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Mr. J. Russell Penny, State Director
California State Office
Bureau of Land Management
U. S. Department of the Interior
2800 Cottage Way
Sacramento, CA 95825

Dear Mr. Penny:

Your preliminary Management Program and draft Environmental Impact Statement for King Range National Conservation Area, located mostly in southwestern Humboldt County, submitted to the Office of Intergovernmental Management (State Clearinghouse) in the Governor's Office, has been reviewed by the state agencies concerned. This review fulfills the requirements under Part II of the U. S. Office of Management and Budget Circular A-95, and the National Environmental Policy Act of 1969.

The project has been reviewed by the Departments of Commerce, Conservation, Fish and Game, Food and Agriculture, Parks and Recreation, Transportation, and Water Resources; the Fair Employment Practices Commission; and the State Water Resources Control Board.

Mineral Development

Under the terms of the management program proposed, all but two of the seven zones of the area would remain open to mineral entry and development, subject to restrictions proposed in Appendix M. Geologic conditions, insofar as these are known in these two zones, are such that the presence of exploitable deposits of valuable minerals is unlikely.

The restrictions proposed in Appendix M are such that mineral activity in the remaining zones would be unduly restrained except for large, well-organized, and well-funded efforts. We suggest that the proposed paragraph (a) of part 3827.1-3 Notification be modified to read as follows:

> 3827.1-3 - Notification
>
> (a) Prior to prospecting, mining, or disturbing the land surface in any manner for such purposes, including but not limited to annual

> assessment work, persons shall notify the District Manager in writing within 90 days but not later than 30 days of the time he intends to conduct such activity and shall include with the notification a statement of his proposed plan of exploration, annual assessment work and development. Upon a determination by the District Manager that such activity will have a significant effect upon the environment, he shall notify such persons that a detailed description of the environmental impact must be provided ~~and a detailed description of the environmental impact~~. The environmental impact information shall provide among other things the impact on air and water quality, scenic and aesthetic features, historical and archaeological features, and wildlife, fish and marine life. Such environmental impact information shall not be required for each activity upon the same deposit, especially in the case of annual assessment work, unless the plan for such, as outlined in the required notification, involves a significant change and impact from that previously provided.

Also, in light of the fact that the only mineral production from the area has been the strategic mineral manganese, a new paragraph (d) should be added to read as follows:

> (d) In the event of a national emergency declared by duly constituted authority, the requirements outlined in paragraph (a) above shall not apply to activities directed toward the production of any strategic minerals including, but not limited to, manganese.

Finally, in several of the documents, reference is made to "rehabilitation" of the Bear Creek claims (manganese) or to "rehabilitation" of "existing surface damages" at these claims. The documents do not state or infer that these claims are anything but valid. Therefore, the "rehabilitation" should be carried out in such a manner that possible future mining activities are not unduly restricted or prevented.

Fire Control

The proposal establishes constraints on certain fire control activities, and the expected increased public use will significantly increase fire risk. The Management Program proposes to restrict the use of fire equipment in Zones 2 and 4 except on approval by the Bureau of Land Management District Manager. This approach may not be flexible enough to meet serious emergencies requiring immediate response. It is suggested that alternate procedures be established in case of communication difficulties. Criteria for determination of extreme emergencies should also be developed.

The proposal is silent with respect to fire prevention and hazard reduction. The Management Program and environmental assessment documents should address the problems of increased fire risk due to more public use and provide for a comprehensive fire prevention program. Provision should also be made for hazard reduction in high public use areas. Construction of fire production facilities and closure of fire access roads should be carefully planned. A comprehensive fire protection plan should be developed in cooperation with the California Division of Forestry to address the above issues.

Timber Harvesting

In view of rapidly changing technology, absolute prohibition of timber harvesting activities in certain areas should be given careful consideration. The proposal provides for preservation of over 90 million board feet of timber. The plan should be flexible enough to allow for utilization of some of these resources, if it later becomes practical and can be demonstrated to be compatible.

Fish and Wildlife

Understandably, there will be pressure from some special interest groups to change certain aspects of the plan. We hope that you will resist any changes which might detract from the area's capability to support fish and wildlife and quality outdoor recreational experiences.

We are particularly concerned with any changes in Zones 2, 4, and 7. Zone 2 is an area of high actual and potential wildlife and recreational value. We concur with your recommendation to manage it for back-country recreational purposes. Vehicular access should be limited to the existing Kinsey Ridge Road. No vehicular use should be permitted on the beach. Livestock grazing should be limited or even eliminated for the benefit of deer and any future established elk population.

Zone 4, if managed as wilderness, will help to provide old growth forest habitat for wildlife species associated with climax vegetation. By managing specifically for wildlife in Zone 7, valuable habitat can be preserved and/or managed for the benefit of a wide variety of wildlife. At the same time, hunting opportunities may be enhanced.

Area of Special Biological Significance

Ocean waters adjacent to the King Range National Conservation Area were designated by the State Water Resources Control Board as an Area of Special Biological Significance on March 21, 1974. This designation will require prohibition of the discharge from the sewage treatment plant at Shelter Cove. The North Coast Regional Water Quality Control Board will work with interests involved to prepare an appropriate schedule for phasing out the discharge.

Sincerely yours,

N. B. LIVERMORE, JR.
Secretary for Resources

By

cc: Mr. Mark Briggs
Director of Management Systems
State Clearinghouse
Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814
(SCH No. 74040180)

AIR POLLUTION CONTROL DISTRICT
COUNTY OF HUMBOLDT
5600 SOUTH BROADWAY EUREKA, CALIFORNIA 95501
PHONE (707) 445-7273

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State Director, J. R. Penny
Bureau of Land Management
2800 Cottage Way, E-2841
Sacramento, California 95825

Dear Mr. Penny:

We have reviewed the draft environmental impact statement for the King Range National Conservation Area and are in agreement with air quality statements made on pages 35 and 65. In reading the statement, we find mention made of several hundred stream clearance projects, road construction projects and logging projects. All of these activities could cause temporary short term degradation of air quality in the form of air pollutants from forest slash and debris burning. Also, dust from these type of projects could cause nuisance to people in the immediate area of the project.

Whereas we do not feel that these projects will cause any significant adverse impact on air quality, some mention of these temporary impacts may be appropriate under area-wide impacts.

The air quality standards which you have stated on page 35 are California standards only. It might be appropriate to list those federal air quality standards which are more restrictive than the state's.

If we can be of any further assistance, please do not hesitate to contact us.

Very truly yours,

C. P. Sassenrath
Air Pollution Control Director

By Robert W. Clark
Robert W. Clark
Deputy Air Pollution Control Officer

RWC:jr
cc: Air Resources Board
EPA - Program Section

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Proposed management program,
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